CLINICAL MEDICINE

A MONTHLY POSTGRADUATE COURSE

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LEADING ARTICLES

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Merritte W. Ireland, Surgeon General, U.S. Army

MERRITTE Weber Ireland was born at Columbia City, Indiana, on the thirty-first of May, 1867, and after his common and highschool education was completed, he attended the Detroit College of Medicine, where he was graduated, with the degree of Doctor of Medicine, in 1890. One year later he was given the same degree by Jefferson Medical College, Philadelphia.

Almost immediately after his graduation from Jefferson, on May 4, 1891, he was appointed Assistant Surgeon, U. S. Army, with the rank of 1st Lieutenant, and, after serving at various western stations for five years, was promoted to the rank of Captain.

On April 19, 1898, he left his station at the Presidio of San Francisco, California, with Battery "C", 3rd Field Artillery, for Port Tampa, Florida, from which place he sailed for Cuba with the expedition under Major General Shafter, and was placed on duty at the Reserve Divisional Hospital, Siboney.

Captain Ireland remained in Cuba until August, 1898, and, upon his return to this country was assigned to Fort Wayne, Detroit, Michigan.

On the fifteenth of November, 1899, he embarked from San Francisco with the 45th Infantry, U. S. Volunteers, holding the rank of Major, Surgeon of Volunteers, for service in the Philippine Islands, during the Insurrection, where he served in the field with this regiment until April, 1900, when he was placed in charge of the Medical Supply Depot, at Manila, which position he filled with credit until March, 1902, at which time he returned to the United States.

A few months after his return from the Philippines, in October, 1902, he was ordered to report for duty in the office of the Surgeon General, U. S. Army, and in the following August he was commissioned a major in the Medical Corps of the Regular Army.

During the next ten years, (until May, 1912) Major Ireland served continuously in the office of the Surgeon General, acting practically as an assistant to that official for a considerable part of that time, and it was here that he received the training in the handling of large military affairs which, together with his broad and varied experience, in military posts and in the field—in peace and in war—has qualified him to render such exceptionally valuable service to his country in his present position.

In May, 1911, he received his Lieutenant Colonelcy, and in August of the following year he again sailed for the Philippines, where he acted as Surgeon of the largest

Post in the Islands—Fort McKinley, near Manila.

Upon his return to the United States, in August 1915, Colonel Ireland was assigned as Surgeon at the Brigade Post of Fort Sam Houston, Texas, where he remained until the United States entered the World War, when he was among the first of the American Expeditionary Forces in France, sailing in May, 1917.

In France he served as Assistant to the Chief Surgeon of the Expeditionary Forces until May, 1918, when he succeeded to the post of Chief Surgeon, and was commissioned a Brigadier General, Medical Corps, National Army. In August of the same year his rank was increased to that of Major General (Emergency).

On October 4, 1918, General Ireland was appointed Surgeon General of the United States Army, with rank of Major General, and returned to Washington to assume that office on October 30, 1918.

At the conclusion of his four-years' appointment he was reappointed by President Harding to serve another four years.

For his exceptionally valuable service, General Ireland was decorated by his own government, with the Distinguished Service Medal; by the British with the rank of Campanion, Order of the Bath; by the French with that of Commander, *Legion d'Honneur* and with the *Medaille des Epidemies*; by the Serbians with the Red Cross Silver Medal; and by Poland with the Order of *Polonia Restituta*.

Since the War the attainments of General Ireland in scholarship, administration and diplomacy, have been recognized by the conferring of the degree of LL. D. by Jefferson Medical College, in 1919, and by Gettysburg College, in 1922; the degree of Master of Arts by the University of Michigan, in 1920; and by his appointment as a Fellow and member of the Board of Regents of the American College of Surgeons; a Fellow of the Royal College of Surgeons, Edinburgh, Scotland (1919); and member of the Central Committee, American Red Cross, and of the Federal Board of Hospitalization.

The task before us is to discipline ourselves by laboring for others, not to gratify ourselves by disciplining others.—Mandell Creighton.

Laws are not made like nets, to catch, but like sea-marks, to guide.—Sidney.

The one clue to success is utter and exact justice.—Wendell Phillips.

STUDY

We sometimes hear a doctor say, "I don't have time to read medical journals and textbooks"; and, when we hear a thing like that, we offer up a little prayer for the poor fellow, that the time may not shortly arrive when he will find himself with more time on his hands than is entirely consistent with earning a living.

We also, sometimes, hear a man making sorry-for-himself noises about how the "damn-fool specialists" in the cities get more in one fee than he is able to earn in a whole year.

If you go out to buy any commodity, you expect to get your money's worth—you do not intend to take less, and you are foolish if you think you can get more. The only imaginable reason why people are willing to pay more money for a Packard than they would for a Ford is because the Packard is a better car.

Medical service is as much a commodity as coal or coffee, and there are many more different grades in that commodity than there are in the things we eat and wear. If you are offering the public a high-grade product you can ask, and *receive*, a higher price for it than they would be willing to pay for an inferior article.

You will notice that the word "product" was used in the last sentence, and it wasn't a slip of the pen, either. Medical service is as truly a product of labor as are threshing-machines or wheat. We all labored hard, for years, in order to obtain sufficient knowledge to secure a diploma and a license to practice. If we stopped there, the machine we worked so hard to build has been deteriorating rapidly ever since; and the crop we sowed with such diligence is fast becoming choked with weeds.

Who are the men who do the largest amount of professional reading? Is it the men who see five or six patients a day and feel lucky if they collect a couple of thousand dollars in a year? If such a man spends all his leisure time in sincere study, instead of in shooting pool, reading the comic supplements and crying because he "never had a chance," he will not long remain in the $2000 class.

A poor boy from Denmark landed in this country, one day, and began shining shoes and selling papers for a living. He died a few years ago, with an international reputation and an income of over $100,000 a year. His name was Nicholas Senn.

No, the big readers and the hard students are the ones who are seeing thirty, forty or fifty patients a day and figuring their incomes in five or six figures. If they didn't keep up the study they couldn't keep up the income. "You can't fool all the people all the time."

Here is the answer. If a young physician will start his library with five standard textbooks and one good medical journal, and *thoroughly digest* the contents of these books and that journal, he will soon be in a position to buy as many more as he needs; and if a man in practice does *not* digest the contents of at least two or three textbooks and at least one good journal every year, he will soon be down to the bed rock of the class of practice which comes because he's the only doctor in town or his fees are the smallest.

Study *hard*. Study *every day*. Fill all the minutes you now *waste* (and that *doesn't* mean the time you spend in enjoyable and needed recreation) with earnest and thoughtful study, and you will soon find yourself able to render the class of service for which people will pay well; and opportunities will come hunting for you.

It is the will that makes the action good or ill.—Herrick.

SOUND AT THE CORE

Some people seem to have the idea that the world in general and this country in particular is going to the "demnition bowwows". They feel that every man who "has the bulge" on anyone whatever is pressing his advantage to the limit; that the motto of modern life is, "Do others before they do you".

It is true that there are moments when there seems to be a modicum of worth in this pessimistic and jaundiced outlook. When we receive a bill from the coal-dealer, the plumber, the grocer—anyone at all—it seems certain that some nefarious power must be foully plotting our financial downfall; and when we read of some of the things which are done—and left undone—in the various gatherings where our laws are made, we sometimes wonder if Diogenes wouldn't become discouraged, if he were pursuing his famous search through the highways and byways of our proud Land, and commit *hari-kiri*, or some other depressing and fatal form of nonsense, like failing to watch the traffic signals at the corner of State and Madison Streets

We really are a bit afraid that, in a broad and general way, there isn't so large an amount of impersonal altruism as we would be well able to bear; but that is merely because we are still a race in its childhood, and haven't yet learned to rise above personalities in our thinking. Take us at the stage of spiritual development we have reached and see how nobly we rise to the occasion.

There are men who would reduce the amount of butter-fat in the milk they were selling to a community, and cheerfully pocket the proceeds, because they can never meet a *community* on the street corner and see it staring at them with wistful and lackluster eyes. The same fellows would give a five-dollar bill to any blue-nosed and hungry-looking kiddie who asked them for help; and, if they learned of a family that was in desperate straits—people they could *see* and *hear*—they would cheerfully spend in a day, to make them comfortable, all the money they had gained by milk-skimming in a week or a month.

The speed-maniac, who goes tearing along a busy street in a high-powered car, is merely endangering a *community*. He would, without a second thought, jump in front of a locomotive, at the risk of his life, in order to save one of the very children whom he blithely jeopardizes every day.

The dangers and hardships endured by the polar discoverers and the men who tried to climb Mount Everest are purely academic subjects and move us not at all. Those men were a long way off. But the prompt and warm-hearted response of our people, when a *personal* appeal is made, has been recently exemplified in a striking manner by the herculean efforts which were made to rescue young Collins from the cavern, which turned out to be his grave. People from all over the country sent large amounts of money to finance the work. Other people toiled almost beyond belief, on the extremely feeble chance that they might find him alive. These folk didn't care a rap because the country is about to perish as the result of "race suicide", or the influx of foreigners or crossword puzzles or something like that, but here was a *man*, with meat and bones, suffering and in danger. The response was instant and enormous.

It is true that a childish and morbid curiosity was manifested by hundreds of people

who came and camped near the mouth of the cave, and other hundreds who stood about and looked on, but under the curiosity was a heavy stratum of genuine interest in and sympathy with a fellow human being, suffering and in dire peril.

While such things as this can happen, we may be a young race and a crude race but inside of us there is a lot of the kind of stuff that will make us a rather wonderful race when we do grow up; and, truly, the calamity-howlers are extremely superficial observers if they think otherwise.

Never be afraid of what is good; the good is always the road to what is true.—Hamerton.

THE PREVENTION OF MEASLES

It is now some years since the studies of Munson demonstrated that, so far as its epidemiology is concerned, measles should be classed with the respiratory diseases, inasmuch as the infectious material is conveyed by the secretions of the mouth and nose.

Almost every physician understands, today, that if they are to limit the spread of epidemic measles they must keep such patients under an observation which will prevent their respiratory secretions from coming in contact, directly or indirectly (as by toys, towels, eating utensils, etc.), with the nasal, mucous membranes of susceptible individuals.

Measles is so widespread in this country that there is scarcely an adult who has not acquired immunity by passing through an attack of the disease; and this immunity, occurring in several successive generations, has developed an hereditary immunity, so that attacks do not, as a rule, give rise to any alarming symptoms, as they do among races or peoples who do not possess it.

There are, however, conditions under which it would be highly disadvantageous or even dangerous for a patient to have an attack of measles, as following an operation or some severe and exhausting disease, like pneumonia, and under such conditions, where the resisting powers of the patient are at a low ebb, they would be the ones most likely to contract it in the presence of an epidemic.

In conditions under which measles would be most dangerous it is obvious that, if we are to secure any degree of protection, hygienic measures of prevention must be reenforced by some procedure which will exalt the resistance of the body to the invasion of the disease. Such a procedure seems to be furnished in the injection of blood-serum from patients convalescent from this disease.

There is a considerable bibliography on this subject, but all essential points are covered in articles by Drs. Geo. H. Weaver, and T. T. Crooks, of Chicago, in the *J. A. M. A.* for January 19, 1924; by Dr. Abraham Zingher, of New York, in the *J. A. M. A.* for April 12, 1924 (this is a very elaborate and exhaustive article); and by Drs. Chas. G. Sinclair and Samuel D. Avery, of the Army Medical Corps, in the *Military Surgeon*, for December 1924. These articles report a considerable number of cases in which undoubted and almost unvarying protection has been secured by this method.

The procedure, very briefly, is this: Six to ten ounces of blood (according to the size of the donor) are withdrawn from the arm veins in the usual manner, under sterile conditions. This blood is allowed to clot and the serum to separate, in the ice box. It is then tested for sterility and for the Wassermann reaction and, if negative, is ready for use.

Best results are obtained with the serum of patients actually convalescing from the disease (five or more days after the temperature becomes normal), but the serum of anyone who is immune, through having had measles, even a number of years previously, is reasonably effective.

Where it is practicable to obtain serum from several persons, these sera should be pooled and injections made from the mixture; but, in an emergency, a single serum may be used.

The injections are made deep into the muscles of the thighs or buttocks in quantities of from 2 to 10 Cc., depending on the age of the patient and the time elapsed since exposure (the larger the patient and the longer the time, the greater should be the dose).

If complete protection is to be secured, the injection should be made within the first 2 or 3 days after exposure. If they are made later, or if smaller doses are used, the disease may not be wholly prevented but the attack will be much milder than in cases which do not receive the serum.

The immunity conferred by this method is almost entirely passive, and is not of long duration (probably from 2 to 5 weeks)

but every physician meets with cases in which the securing of even such a respite as this would be an inestimable boon.

Good leading makes good following.—Dutch Proverb.

Education is our only political safety.—Horace Mann.

PNEUMONIA DEATHRATES

The year 1924 showed the lowest deathrate, from all causes, that has yet been recorded. Pneumonia stands well up toward the top of the list, with a general rate of 68.5 for whites, and 136.7 for colored, per 100,000, according to the records published in the *Statistical Bulletin* of the Metropolitan Life Insurance Company.

It is of interest to note that the lowest rates for this disease occur in the Northwest Provinces of Canada and in our Pacific States, and the highest in the Middle Atlantic States, where the deaths number nearly twice those in the Pacific States. Pennsylvania leads them all, with a rate of 100 per 100,000, for whites.

It might prove an interesting study to try to determine why there is this wide variation in death rates per 100,000, between Idaho, with a rate of 8.9, and Pennsylvania, with a rate of 100.

We used to think that altitude made a great difference, but these figures show nothing of the kind. Cold, too, seems to be negligible as a factor, unless it is combined with excessive humidity.

It is probable that occupation plays a larger part than has heretofore been supposed; and last year, as always, the rate has been much higher in cities than in rural districts.

In all parts of the country, the rate runs about twice as high for negroes as it does for whites, and in Michigan and Virginia, three times as high.

While distinct advances have been made in the last few years, in the handling of cases of pneumonia, the deathrate has not been very materially lowered (nothing like that for tuberculosis), and there remains an enormous field for study and investigation as to the best methods for treating these cases. All the help that every clinical observer can give us will not be too much.

Be not angry that you cannot make others as you wish them to be, as you cannot make yourself as you wish to be.—Dr. Johnson.

RESTRAINED ENTHUSIASM

Throughout the world, in laboratories, hospitals and clinics, devoted scientists are spending their lives in endeavor to so advance the progress of medical science as to bring measurably nearer the day when we will have absolute control over all forms of disease.

Whenever a man gives all or a large part of his time to any particular line of study or research he is, or promptly becomes, an enthusiast on that subject. This is eminently right and necessary. Were he not an enthusiast, he could not force himself to continue the years of painstaking labor which, alone, lead to the advancement of science.

Most of the investigators are modest and diffident in announcing the results of their study and experiments, but when such results bid fair to contribute largely to the health and longevity of the race, they are seized upon by publicists, both in and out of the profession, whose scientific training is meager or wholly lacking, and the guarded statements of the student are used as a basis for the most extravagant claims. These claims are read by suffering but hopeful humanity and great dreams result, from which the waking is sometimes very bitter.

Several examples of this kind are now prominently in the public eye. Møllgard's, sanocrysin, suggested for the cure of tuberculosis; the hexylresorcinol, of Dr. Veader Leonard, of Baltimore, which may (or may not) prove to be the medium for the *therapeutica sterilisans magna*, which has been sought as diligently as was ever the philosopher's stone, of old. Also the public prints carry, under large headings, the story of how an Austrian surgeon, Dr. Koppanyi, has succeeded in transplanting a human eye, with the inference that this procedure may prove a practicable method for the relief of blindness.

We are all longing for the day when we will be able to do more to ameliorate the condition of those who apply to us for help; and most of us tend to be enthusiasts, else the burden of our daily labors would become intolerable. This is very well, but let our enthusiasm be always tempered with judgment. Let us experiment with new remedies with painstaking care and unfailing diligence, and await with patience the publication of uncontrovertible clinical evi-

dence, keeping our minds always open and free from pharisaical bias.

New suggestions meet us wherever we turn. If we reject them all because they are untried, we wrong ourselves and our patients. If we accept them all with perfect credulity we do wrong, also.

Let us endeavor to maintain an attitude of restrained enthusiasm—eager but judicious—so that we may, without prejudice, "prove all things and hold fast that which is good".

PUBLIC HEALTH

If the oldest of our readers will look back to their college days, they will realize that the instruction then given in hygiene and sanitation was so inadequate as to seem, in the light of present-day knowledge, to have been a joke.

At present conditions are better; but, even now, it is impossible to cover the necessary ground as a part of a course of general medical instruction and, recognizing this, a number of our educational institutions have inaugurated a course of instruction leading to the degree of Doctor of Public Health.

Just now the second city in our country is faced by a tremendous problem in connection with the disposal of her sewage, and echoes of the fight resound wherever newspapers are read.

The adequate solution of this problem is absolutely vital to the health and happiness of practically four millions of people. It is to be hoped that all who are concerned in the matter are equipped with sufficient technical knowledge to work out a satisfactory solution and sufficient courage to act wisely in spite of any private interests or political pressure.

Chicago's present problem is not unique. Every great city is daily wrestling with the problems of the disposal of wastes; the providing of safe supplies of water, milk and foods; and many other questions, the highly technical nature and far-reaching importance of which can be understood only by those who have had extensive training in modern sanitary science.

Nor are the great cities the only communities which have problems to solve. As the comforts and refinements of civilization become more widely distributed, the small cities and villages are coming to have their sanitary problems, different only in degree from those of the larger municipalities.

As people come to understand the importance of preventive medicine, the demand grows for paid experts in these lines to assume the duties of town and county health officers.

We cannot stop the march of progress. Why not get on the band-wagon and hear some of the music?

HEART DISEASE AND SYPHILIS

"Heart disease has supplanted tuberculosis as the greatest mankiller."

This assertion was made by Dr. Robert H. Halsey, of New York, in a paper presented to the American Association for the Advancement of Science at its last annual meeting in Washington, D. C. The assertion is further substantiated by Dr. Stewart R. Roberts in a paper recently read before the Southern Medical Association in New Orleans, and by figures just given out for the year 1923 by the United States Department of Commerce. Dr. Roberts not only places heart disease as the most deadly destroyer of human life, but he also points to syphilis as one of the greatest causes of heart disease. It was said at the meeting that syphilis is responsible for 52 percent of all heart troubles.

According to statistics compiled by the Department of Commerce for the registration area, comprising 87.6 percent of the population of the United States, heart disease claimed 170,033 lives in 1923, as compared to 105,680 deaths caused by pneumonia and 90,732 by tuberculosis. Syphilis is credited with a toll of 15,811 deaths.

"If the above figures are correct," says the Division of Venereal Diseases of the United States Public Health Service, "syphilis may also be held responsible for 52 percent of all the deaths resulting from heart trouble, or 88,417 fatalities. When this sum is added to the 15,811 deaths credited to syphilis by the census figures, the result is a total of 104,228 deaths caused by syphilis directly or indirectly, and this total is arrived at without taking into consideration deaths caused by some other diseases which are in many cases a result of syphilitic infection. Experiments recently made in Paris would seem to indicate that 76 percent of syphilitics have heart trouble. Out of autopsies on 155 known syphilitics there were 115 cases in which vascular lesions of the heart were found."

Leading Articles

The Medical Department of the United States Army

By Major General MERRITTE W. IRELAND
Surgeon General, U. S. Army, Washington, D. C.

LITTLE more than six years have elapsed since a goodly proportion of the physicians of the United States were serving actively in the Medical Department of the United States Army. During November, 1918, the Department attained its maximum strength and consisted of:

Officers	
Medical Corps	30,591
Dental Corps	4,620
Veterinary Corps	2,002
Sanitary Corps	2,919
Contract Surgeons	939
U.S. Army Ambulance Service	209
Army Nurse Corps	21,480
Enlisted	281,341
TOTAL	344,101

Inasmuch as so many of the medical and allied professions have seen service in the Medical Department, a brief history of this organization may be of interest to the readers of this journal.

The Medical Department traces its ancestry to the early days of the Revolutionary War when, during the siege of Boston, there was organized a hospital for the care of the troops.

Early History

One of the early actions of the First Continental Congress was to legalize the hospitals which had been established. Dr. Benjamin Church was elected as the first Director General and Chief Physician and was given authority to appoint four surgeons; these surgeons were authorized to appoint not to exceed twenty surgeon's mates. Doctor Church was accused of having Tory affiliations and was soon relieved by Dr. John Morgan, who was one of the leaders of the medical profession of his time. Drs. William Shippen and Benjamin Rush also occupied in turn the position of Physician in Chief during the Revolutionary period. However, it fell to the lot of Doctor Morgan to do the basic work in the organization of the medical service of the American Army.

Doctor Morgan had an unenviable task. The hospitals were crowded and practically without equipment. Blankets, sheets and pillows were almost entirely wanting. There were few instruments, medicines, and dressings. The government was without funds to make purchases. Doctor Morgan found it necessary to appeal to the citizens in the vicinity of the hospitals for supplies; that he was successful in his appeal is evidenced by the fact that he made public a letter thanking the people for their contributions.

The whole history of the Revolutionary War is replete in accounts of hardships borne by the troops. Smallpox was always present. The possibility of an outbreak of this dread disease was ever feared by the commanders and had considerable influence on the plans for campaigns. Inasmuch as all troops were expected to be infected with smallpox sooner or later, the soldiers were in the habit of inoculating themselves with virus from a mild case with the hope of warding off a severe attack. At one time a general order was issued forbidding this practice but had small influence in stopping it. It is said that General Washington himself thought favorably of the custom.

Typhoid fever, typhus and dysentery were rampant. In September 1775, the total Army amounted to 19,365, of which 2,817 were on sick report.

A striking example of the advance in preventive medicine is made manifest by the fact that the diseases which caused such great inroads on the strength of the forces during the Revolutionary War were under control in the American Army during the World War. Typhoid and smallpox were controlled by vaccination and proper sanitary measures; typhus and dysentery by sanitary measures alone.

During the entire period of the Revolutionary War there was a paucity of medical supplies and medical officers. This led to

discontentment and friction, so considerable that the organization of the department and officers in authoritative positions were frequently changed. After the surrender of Cornwallis the Medical Staff was practically disbanded; in fact, from 1784 to 1789 there was no Medical Department authorized by the Government, physicians being provided by the states as the need arose. The entire Army at one time numbered only seventy men.

First Official Recognition

On August 10, 1789, General George Washington requested Congress in its first session to legalize, according to the Constitution, the troops which were then in service. This force consisted of one regiment of infantry and two batteries of artillery—a total of 840 men—and included one surgeon and five surgeon's mates. The total emolument of a surgeon was $67.00 a month. While this amount now seems pitifully small, it was in keeping with living standards of the time.

In 1798 the military forces were increased on the probability of war with France, and at this time Congress provided for the appointment of a Physician General. James Craik of Virginia, who had served in the Revolutionary War and who had moved to the vicinity of Mount Vernon at the request of General Washington was so appointed. He held the position a comparatively short time as he was soon called to attend General Washington in his last illness.

In 1800, it being evident that there would be no war, all medical officers except six surgeons and 12 surgeon's mates were mustered out, and it was not until the War of 1812 that the Medical Department was further increased. It is of interest to note that during a great deal of the period so far reviewed, there was an Apothecary General as well as a Physician General.

Beginning of the Medical Department

The history of the Medical Department as such is usually considered as beginning with the Act of April 14, 1818. James Lovell, who was appointed under this act, is ordinarily named as the first Surgeon General of the Army.

One of the main changes contemplated by this Act, the abolishment of regimental medical officers and the incorporation of these individuals into a Corps, was not put into effect until 1821.

Doctor Lovell served as Surgeon General until 1836, being succeeded by Thomas Lawson who remained in office during the Mexican War and through the early months of the Civil War. He died in office in 1861, from a stroke of apoplexy. It was during Doctor Lawson's incumbency that military rank without command was conferred upon medical officers. The commissioned personnel was also augmented by the enlistment of hospital stewards. Previous to this time the surgeons were dependent upon women nurses and matrons and such volunteer help and details from line troops and convalescents as they were able to obtain.

Since the Civil War

The history of the Medical Department from the advent of the Civil War to date cannot be covered satisfactorily within the scope of this article; a resumé of the lessons derived from the wars and the chronicling of the pioneer work of individual officers in medical and allied sciences must suffice.

It was during the Civil War that Jonathan Letterman, Surgeon of the Army of the Potomac, inaugurated a system of evacuation, the general principles of which are still recognized as basic. During this war there was inaugurated the pavilion system in the construction of hospitals in much the same manner as our cantonment base hospitals were built during the late war. There was also developed, during the Civil War, the system of reporting sick and wounded which has been of so great value in the recording of vital statistics. This report system made possible the assembling and the publication of the "Medical and Surgical History of the War of the Rebellion" which is considered the most comprehensive contribution to the science of military medicine up to that time. Credit must be given to William A. Hammond, Surgeon General during a greater part of the Civil War and to his successor Joseph K. Barnes, and his associates in producing this work.

Most of us as school boys, on our first introduction to physiology, learned of the studies of Dr. William Beaumont in the case of Alexis St. Martin and his description of the mechanical process of gastric digestion as seen by the naked eye. I believe, however, that comparatively few know that Dr. William Beaumont was an army surgeon and that his experiments on and observation of St. Martin were conducted over a period of eight years (1825-1833) at various frontier army posts in

what is now the middle west. Much of this work was conducted at the personal expense of Beaumont inasmuch as St. Martin was a pauper and, in order to continue his observations, Dr. Beaumont supported St. Martin and paid the expenses of his patient in the various moves which were necessary on account of changes of station.

The Work of Sternberg and Walter Reed

General George Miller Sternberg, who was Surgeon General from 1893 to 1902, has been called the father of bacteriology in America. He published an important work on bacteriology which was long held as standard; and he was the first to isolate the micrococcus of croupous pneumonia. During his administration as Surgeon General there were conducted the investigations which led to the discovery of the method of transmission of yellow fever. These experiments and studies were made by Walter Reed and his associates James Carroll, Aristides Agramonte, and Jesse W. Lazear. Their work was carried on in the face of ridicule by the lay press throughout the United States and also by the medical profession.

The investigations of Reed and his associates have been one of the outstanding examples of personal sacrifice, fortitude and scientific accomplishment in the history of medical science. It has made possible the almost complete eradication of yellow fever from the face of the globe and has resulted in the saving of tens of thousands of lives and millions of dollars. This basic work also made possible the sanitary measures conducted by William C. Gorgas, the late Surgeon General, for the sanitary regeneration of Havana and the Canal Zone and made feasible the construction of the Panama Canal. The Panama Canal Zone now is an ideal place to live, from a health standpoint; during the construction of the original Panama Canal by de Lesseps it was a hotbed of pestilence.

The scourge of typhoid fever which obtained during the concentration of troops for the Spanish American war has not been without beneficial results. The lessons derived therefrom have done much toward the elimination of typhoid fever, not only in the United States but throughout the world. Credit is due to Walter Reed of the Regular Establishment, Victor C. Vaughn, and Edward O. Shakespeare of the Volunteers for their studies and recommendations. The investigations of this Board made possible the later work of Major F. F. Russell who devised the means of preventive inoculation against typhoid and paratyphoid fevers by the use of specific vaccines.

Other Army Scientists

Colonel Russell, after the World War, resigned his commission in the Army and is at present director of the International Health Board of the Rockefeller Foundation. This Board is now seeking to eradicate the only known foci of yellow fever from the face of the globe and is conducting antihookworm campaigns in various parts of the world. Other medical officers of the Regular Establishment who have contributed pioneer work in medical science are Colonel Bailey K. Ashford, who was surgeon of the First Division in France. His great work has been in connection with the control of hookworm disease in Porto Rico. Colonel Edward B. Vedder demonstrated that emetine has a specific action against the ameba of dysentery. Emetine is now classed as a specific for amebic dysentery in the same manner as is quinine in malaria.

We point with pride to the fact that the Reserve Corps idea was originally sponsored by General Robert Maitland O'Reilly, Surgeon General of the Army from 1902 to 1909. As early as 1908, Congress authorized the formation of the Medical Reserve Corps; this preceded by eight years the law which authorized a Reserve Corps for other branches of the service.

The Medical Department in the World War

When the United States entered into the World War, the Medical Department had reserves ready to send. The first organized unit of the American forces to sail for France was Base Hospital No. 4, sponsored by Lakeside Hospital, Cleveland, Ohio. This hospital was organized by the Red Cross, sailed for France on May 5th, 1917, and was immediately sent to the British front. The first American officer killed by the enemy in the war was a medical officer, William Thomas Fitzsimons of Kansas who was adjutant of Base Hospital No. 5. He, with three enlisted men, was killed on the night of September 4, 1917, by an enemy air-raiding force which bombed the hospital. The first *man* wounded by enemy fire during the World War happens to have been a *woman*. Miss Beatrice MacDonald, of Base Hospital No. 2, while a member of a surgical team serving at (British) Casualty Clearing Station No. 61, on the Brit-

ish front, was wounded and lost one eye as the result of the explosion of a bomb dropped from an enemy airplane. This occurred August 17, 1917.

A history of "The Medical Department of the United States Army in The World War" is now in the process of compilation. This work will be the permanent, written record of the Department in the war, and will not only be of use for study with a view to betterment of that Department in the future, but also as a contribution to medical science. It will cover not only administration, but will contain a vast amount of scientific information such as can be gathered only from carefully kept records based on the observations made on hundreds of thousands of individuals. Four volumes have already been published; fifteen are contemplated.

Decreasing Death Rates

The progress which has been made in the maintenance of health and the prevention of disease in the Army is clearly shown when comparison is made with former wars. During the past century, the deaths from disease in the Army have gradually dropped from 30 per thousand per year to about 3 per thousand. Deaths from disease during the Civil War were approximately 54 per thousand per year; the ratio during the Spanish American war dropped to about 25 per thousand—less than half of that which obtained during the Civil War. The ratio during the World War dropped further so that only 14 men per thousand died of disease each year. Of the total dying from disease during the World War, 75 percent of the deaths were due to influenza and pneumonia. Except for influenza and its complications, the disease rate for the Army during the World War is remarkably low.

During the Civil War 7058 soldiers died of smallpox. During the Spanish American War and Philippine Insurrection there were 258 deaths from this disease. However, during the World War, there were only 14 deaths from smallpox, notwithstanding the fact that nearly 4,000,000 individuals were in service. During the Civil War there were 15,423 deaths from malarial fever. During the World War only 25 deaths were attributed to malaria.

The most striking achievement in the prevention of disease has been that of the control of typhoid and paratyphoid fevers. During the Spanish American War there were approximately 20,000 cases of typhoid fever from 250,000 troops. During the World War only 2,000 cases of the disease occurred in about 4,000,000 men during a much longer period of time. Had the same rate for typhoid fever prevailed during the World War as occurred during the Spanish American War, we would have had approximately 60,000 deaths from typhoid fever alone or, in other words, we would have had as many deaths from typhoid fever alone as occurred from all diseases during the entire war.

The splendid manner in which the medical profession of the country played its part during the World War can be realized when we state that of a total of 224,260 battle casualties (wounded) treated in our hospitals 185,382, or 83 percent, were discharged from the hospitals as being physically fit for duty.

Since the War—the Reserve Corps

The period immediately following the World War has been unique in the history of our nation. Despite the confusion and inefficiency resulting from unpreparedness in former wars, immediate reduction of the Army of the United States followed these wars. Little consideration was given to the necessity or desirability of making preparation for wars which might be forced upon us in the future. The people now realize that preparation for war is insurance against war, and accordingly Congress has passed a National Defense Act which intends to provide at all times an adequate Army of the United States. By this Act, the Army of the United States now consists of the Regular Army, National Guard, and the Organized Reserves. With the passage of this law, the Medical Department has another mission to perform besides that of the preservation of the health of its forces and the treatment of the sick. This task is the planning for the procurement of supplies necessary in war, the enrollment of physicians, dentists, veterinarians, and nurses and various specialists who may be called upon, and lastly but perhaps more important than all, the training of these individuals in order that they may assume their military functions at the proper time. A medical officer must not only be a trained scientist but a capable administrator. He should be familiar with the tactics of combat troops with which he is serving, insofar as it is necessary for him to know in order that he may carry on his function efficiently.

The training of Medical Department officers as well as officers of other branches is now being conducted by courses given in our various service schools; by the use of correspondence courses; by instructors detailed with National Guard and Organized Reserve units; by summer training camps; by Organized Reserve and National Guard Associations; and by the R. O. T. C. units.

The officers now on the rolls of the Medical Department of the Army are:

Regular Army	1,276
National Guard	1,204
Organized Reserve	13,495
TOTAL	15,975

Of this number approximately 9,800 are members of the Medical Corps, the balance belonging to the Dental, Veterinary, and Medical Administrative Corps, etc. About 500 of the medical officers of the National Guard are also members of the Organized Reserve Corps. R. O. T. C. units of the Medical Department are being conducted at 35 selected colleges and universities; 3,874 students are taking the officers' training courses in these colleges; 505 students become eligible for commission in the Organized Reserve this year. There is practically always a limited number of vacancies in the Regular Establishment. Some of these are being filled by selected graduates from the colleges having training corps units. Examination for commission is held for qualified applicants of the medical profession at large from time to time.

Under the National Defense Act, it is an obligation of the Medical Department to enroll about 40,000 officers. The fifteen or more thousand already enrolled is considered a fair start. It is the aim of the Department to entirely fill its rolls within the next few years.

The Adrenals

By JAMES H. HUTTON, M.D., Chicago, Illinois

THE ADRENALS consist of two parts: a cortex and medulla. These are morphologically, embryologically, and physiologically different structures. The cortex is essential to life, but about its function in the body we know very little and no active principle has ever been isolated from it. The medulla is not essential to life but its active principle was isolated by Takamine and Aldrich in 1901.

The Medulla

Embryologically the medulla is developed from tissue common to it and the sympathetic nervous system. From that part of the neuroblast in which are laid down the primitive ganglia of the posterior roots, masses of cells are split off which become the common ancestors of the sympathetic ganglia and the chromaffin system. These cell groups wander from their sites of origin and come to lie along the vertebral bodies, ranging themselves in the abdomen on either side of the aorta. One mass seeks the adrenal cortex which has been formed at an earlier stage of development and passes into its interior. Differentiation of these cells then proceeds in two directions. Those lying along the aorta form, for the most part, sympathetic ganglia; those within the adrenal cortex develop into chromaffin cells to constitute the medulla of the gland.

Histologically the medulla is made up chiefly of a network of cords of epithelial cells. These contain granules which stain well with nuclear dyes and have a characteristic affinity for chromium salts, with which they stain brown or yellowish brown. Because of this affinity for chromic acid and its salts, the tissue of the medulla and similar tissue scattered elsewhere are grouped together as the chromophil or chromaffin system.

Theories Regarding the Function of the Medulla

Various theories regarding the function of the medulla have been proposed as follows: The tonus or angiotonus theory, the antitoxic and Cannon's emergency theory. The tonus theory regards the adrenal as a factor in the maintenance of tone of smooth muscle through the sympathetic. This theory is disregarded by most writers. Cannon's emergency theory states that little or no adrenalin is sent into the circulation under normal quiet existence, but, under the influence of pain, asphyxia or emotional disturbance adrenalin is poured into the circulation where it heightens the effect of sympathetic impulses, increases the irrita-

bility of fatigued muscles, stimulates activity of the thyroid and other glands and concentrates the circulating blood to the best advantage for violent physical activity. Cannon's emergency theory, while violently opposed by some experimental physiologists, especially by Stewart and Rogoff, is pretty generally acknowledged at this time to offer the best explanation of the function of the medulla. It is sometimes referred to as the fight, fright and flight theory.

Sajous holds that adrenin, while passing through the lung capillaries, takes up oxygen and becomes a constituent of hemoglobin. To this new constituent he gives the name "adrenoxidase" and attributes to it catalytic properties by virtue of which it sustains oxidation within the tissues of the entire body when carried to them by the blood. Recently he has advanced the view that the vitamine "C" of the food is the homologue of the adrenal medullary product, adrenin.

The antitoxic theory states that the medulla secretes a substance having the property of neutralizing exogenous and endogenous poisons, especially the latter, and more particularly those arising as a result of muscular activity. I believe the physiologists do not accept this theory, though it is rather more seriously considered among clinical endocrinologists.

Hoskins says the medulla seems merely to reinforce the sympathetic in times of stress. The active principle of the medulla is variously called "adrenin," "adrenalin," or "epinephrin."

Pharmacodynamics of Adrenalin

The effects of adrenalin injected either subcutaneously or intravenously are as follows:

1. A mass shifting of the blood from the skin and abdominal viscera, especially the gastrointestinal tract, to the lungs, liver, muscles, heart and brain, thus concentrating the circulating blood to the best advantage for violent physical activity.
2. Increased liberation of glycogen from the liver, with hyperglycemia, occurs.
3. Increased clotting power of the blood.

Injections of this substance are said to raise the blood pressure, but this is not always true as, many times, after injections, the blood pressure is reduced. It is a vasoconstrictor when applied locally to the mucosa.

Muscular Structures Excited by Adrenalin

1. Dilator muscle of the pupil.
2. Muscle fibers of the spleen, vagina and uterus (depending on whether it is pregnant or not), vas deferens and retractor penis (in the dog).

Muscular Structures Inhibited by Adrenalin

Muscles of the stomach, intestine, esophagus, gall- and urinary bladders.

Diagnostic Uses of Adrenalin

Loewi's test for pancreatic insufficiency—adrenalin dropped into the conjunctival sac of a diabetic—will cause dilation of the pupil. This does not occur in a healthy individual.

Goetsch Test for Hyperthyroidism

The test is performed as follows (Peabody, Clough, Sturgis, Wearn, and Tompkins): The patient lies quietly for at least an hour. When the blood pressure and the pulse and respiration rates are found to be constant for several observations, made at intervals of five minutes, an injection of 0.5 Cc. of a 1 to 1,000 solution of epinephrin is made into the deltoid muscle. Records are then made of the systolic and diastolic blood pressure and of the pulse and respiration rate every two minutes for ten minutes; then every five minutes for one hour, and then every ten minutes for a half hour. A positive reaction consists in the production of flushing, sweating, increased vascular pulsation, increased tremor of the hands, restlessness, and general nervousness. In marked cases the blood pressure may rise 30 or 40 mm. and the tendency of the pulse is to follow the systolic blood pressure. The pulse pressure is characteristically increased. A moderate rise in blood pressure alone is not regarded as a positive reaction.

In addition to the foregoing test, Goetsch has worked out a *skin* reaction with adrenalin as a test for hyperthyroidism. It is performed as follows: Eight minims of a 1 to 1,000 solution of adrenalin hydrochloride are diluted with an equal quantity of sterile water and injected into the arm subcutaneously. Immediately there is formed an area of blanching around the site of injection, about the margin of which there usually appears a red areola gradually shading off into the tint of the surrounding tissue. In about half an hour the center of the white area becomes bluish-gray to lavender and at the end of one and one-half to two hours the red areola takes on the bluish or lavender color while that in the center disappears. This lavender areola remains for about four hours from the time of injection and is the most characteristic part of the test. Accompanying the local action there

may be an increase in pulse rate with palpitation of the heart and an exaggeration of the tremor and nervous symptoms in general. While it is generally agreed that the Goetsch test is positive in cases of hyperthyroidism, it is also sometimes positive in normal individuals. It is not advisable to use it in cases where the nervous or circulatory symptoms are severe. Both tests may be done with one injection as practically the same constitutional symptoms occur with both injections.

Therapeutic Uses of Adrenalin

Meltzer recommends intraspinal injections in anterior poliomyelitis. Its value in this condition is doubtful and not generally admitted by most writers. It is used very satisfactorily in the treatment of urticaria, angioneurotic edema and serum sickness. In these conditions prompt relief usually follows the subcutaneous administration of from 0.5 to 1 Cc. of a 1 to 1,000 solution. This may be repeated frequently if necessary. For patients who are sensitive to it, the dose may be reduced to 0.25 Cc. In cases of cardiac collapse the intravenous injection of 0.25 Cc. may be of great value.

The subcutaneous injections just mentioned may be used to prevent the nitroid crises of arsphenamine and neoarsphenamine injections and to counteract the hypoglycemic symptoms produced in diabetic patients by insulin. The nitroid crises may sometimes be prevented by placing 10 minims under the tongue twenty minutes before the injection is begun. It has also been used in shock, tabetic crises, intractable hiccough and heart block. It will sometimes relieve the pain of lead colic when morphine fails. It has been used as an antidote to poisoning by iodine and chloral. Additions of small quantities of it to anesthetic solutions for local work enhances their effect and prolongs the time of their action. Hemorrhages are sometimes controlled by local application to oozing surfaces. It relieves attacks of bronchial asthma by producing relaxation of the bronchial musculature when applied to the nasal mucosa or given hypodermically.

Cardiovascular Conditions

Adrenalin is useful in conditions where there is marked vasodilatation and the heart musculature is in good condition (these conditions are present in chloral poisoning, shock, and asphyxia); also in arrest of heart during anesthesia.

It is used empirically in tuberculous pleurisy; and in pleural effusion, accompanying carcinoma of the lung, the introducton of this drug into the pleural cavity is said to prevent or delay the occurrence of further effusion. It has been used by Naame and others in the treatment of cholera with what were said to be favorable results. It has also been recommended in the treatment of amebic dysentery. In the latter condition it may be given by mouth in doses of 10 to 20 drops of a 1 to 1,000 solution every two hours, or it may be given by rectum in daily enemata, using two liters of normal salt solution containing adrenalin in the amount of 1 to 500,000 or 1 to 1,000,000. This is advised in either the acute or chronic condition. Remlinger and Dumas call attention to the symptoms of hypoadrenia in cases of prolonged chronic dysentery. Sajous believes the adrenals are directly involved in pneumonia and that death in this disease is due primarily to adrenal failure. He recommends adrenalin or the whole gland in the treatment of pneumonia.

The Adrenal Cortex

The adrenal cortex is derived from mesodermic cells of the genital ridge. It consists of polygonal cells which contain one or two vesicular nuclei and glistening, highly refractile, fat-like granules, taking the various fat stains and soluble in the various fat solvents. The cells are held together by a delicate frame-work of connective tissue. They are arranged in three zones: The zona glomerulosa, the zona fasciculata, and the zona reticularis.

Theories Regarding Function of the Cortex

Little is known regarding the function of the cortex though there is small doubt that it is closely related to the development of the sex organs. Evidence of this relation is about as follows:

1. It arises from the mesoderm in common with the sexual organs. There is a remarkable similarity between the cortical cells and those of the corpus luteum.
2. In cases of sexual precocity, the adrenal cortex is much hypertrophied, also certain tumors of the cortex occurring in young children are associated with premature development of the secondary sexual characteristics.
3. The cortex becomes hypertrophied during pregnancy.
4. It is ill developed in sexual deficiency.
5. Changes occur in it during the estrual cycle of many animals.
6. After castration the cortex is said to be hypertrophied.

A detoxicating function has been ascribed to the cortex. This possibility has been suggested by Meyers who found that cobra venom, to which has been added an emulsion of the cortex, was rendered innocuous. The addition of other tissue was without such effect.

It has been suggested that the cortex forms a sort of pre-adrenin which passes to the medulla where it is completely elaborated. This idea is based on the fact that a piece of cortex when incubated at body temperature yields a substance having many of the properties of adrenin. It is also believed that it has something to do with the elaboration of cholestrin and lipoids which probably are active in the defense of the body against infection.

As a result of his experiments, Tokomitsu arrives at the following conclusions:

1. The suprarenal cortex is an entirely independent organ from the medulla. Its function is antagonistic to that of the latter and inhibits adrenalin secretion.
2. It has a synergistic action with the pancreas for carbohydrate metabolism. Glycosuria is caused when a large part of the cortex is removed even when the pancreas is not degenerated.
3. It accelerates the pancreatic secretion. This acceleration is the same even after the vagus or sympathetic nerves are cut. Its action is independent of secretin.
4. This accelerating substance in the cortex lowers the blood pressure. It does not coagulate blood.
5. It is functionally antagonistic to the thyroid gland; distinctly so for carbohydrate metabolism. The thyroid and suprarenal medulla are functionally synergistic.
6. The thyroid gland hypertrophies when the suprarenal gland atrophies.
7. The cortex is vital for the life of animals. Life can be maintained with one-quarter of one cortex. The medulla has no such influence.
8. When the cortex or medulla of the suprarenal gland are atrophied gradually, gastric ulcer is not formed.

Marine and Baumann found that by damaging the cortex by freezing with ethyl chloride, or by some other method, they could reproduce in an experimental way most of the symptoms of exophthalmic goiter. They then treated a small series of exophthalmic goiter cases with 50-percent emulsion of fresh cortex in glycerine, administered by mouth. Their results were very promising. They could not obtain similar results by the use of desiccated gland. It would seem quite possible that they have discovered the "missing link" in exophthalmic goiter.

No active principle of the cortex having been isolated, it can be administered only as desiccated whole gland or as fresh gland. It is rarely given in the latter form though it has been so given in the treatment of hyperthyroidism. While the results were favorable in a small series of cases, this treatment has not been generally used.

Results of Extirpation of Adrenals

Extirpation of one adrenal causes little effect on animals: of both, whether at one operation or two, causes death, it being postponed a little longer when there is an interval between the two operations. In animals, about one-fourth of one adrenal is sufficient to maintain life.

Symptoms following extirpation appear about the third day. The animal becomes apathetic and refuses food. Muscular weakness develops and movements become uncertain. The hind legs become stiff and paretic; the temperature falls; respirations become labored and the heart irregular and weak. Death occurs in three to six days, occasionally preceded by twitchings or convulsions. Sometimes gastric ulcer is noted in these animals.

The effect of extirpation on metabolism is largely a matter of speculation, though there is said to be an increased elimination of phosphoric acid. In Addison's disease, there is a low blood-sugar.

Accessory Adrenals

Accessory adrenals are quite frequent and may consist of medullary tissue alone or cortical tissue alone, or of the two combined. They rarely exceed the size of a pea. They are located in the neighborhood of the true adrenals, in the retroperitoneal space ,in the broad ligaments, and in the space between the testis and the epididymis. In the latter location they are known as Marchand's adrenals.

Those resembling the medulla are called "chromaffin" bodies or "paraganglia" and are found in connection with the abdominal sympathetic and its extensions. Zuckerkandl's organ is a small body of this type situated in front of the bifurcation of the abdominal aorta.

Congenital Anomalies

Congenital anomalies are usually found associated with cerebral defects. Zander, in forty-two cases of hemicephalus, found abnormally small adrenals. Whenever the anterior portion of the cerebrum is wanting, the adrenal is small, the hypoplasia affecting principally the cortex. In Elliott

and Armour's case of anencephalus the adrenal cortex was absent but the medulla and paraganglia were present and normal. Czerny found the medullary substance lacking in five cases of congenital hydrocephalus. Hypoplasia of the chromophil system has been found in connection with status lymphaticus and the status thymicolymphaticus by Hedinger, Wiesel and others.

Tumors of the Adrenals

Cortex—
- (a) Hyperplasia, nodular or diffuse;
- (b) Adenoma;
- (c) Carcinoma.

Medulla—
- (a) Focal hyperplasia of
  1. Glia tissue, or
  2. Chromaffin cells;
- (b) Neuroma ganglionare;
- (c) Neurocytoma "sarcoma";
- (d) Suprarenal chromatophoroma.

Adrenal sarcoma occurs in infants, with cranial metastases (Hutchinson's type). He described a peculiar syndrome in thirteen cases of adrenal sarcoma in children from three months to nine years old. The disease begins spontaneously or after trauma with ecchymosis of one or both eyelids soon followed by exophthalmos, a tumor of the orbit, and temporal region, with extensions to the auricular and submaxillary lymph nodes. The orbital tumor reaches large dimensions while the abdominal growth may be discovered only at autopsy.

The adrenal growth may be as large as a walnut or a child's head, but shows little tendency toward local extension. Secondary growths appear also in the ribs, spine, and long bones as well as in the liver and other organs. Whether these are accompanied by such bodily changes as go along with tumors of the cortex is not recorded.

Tumors of the cortex usually produce far-reaching changes. If they develop in early life, they are accompanied, in boys, by precocious puberty, and in girls the same with a tendency toward the appearance of male characteristics. Profuse hirsuties, swarthy skin and excessive appetite and thirst are common features. Gastric disorders, especially vomiting, have been noted in some instances. Among eighteen cases analyzed by Jump, Beates, and Babcock, fourteen were in girls and four in boys. In all of these an overgrowth of hair occurred on the pubes; in fourteen on the face; and in five in the axilla. There were also, in some, an increased fatty and muscular development with rough skin and acne of the face. There was pigmentation of the skin in a number, but not a distinct bronzing such as occurs in Addison's disease. There seemed to be a tendency to the development of the male at the expense of the female characters in the girls and an intensification of the male characters in the boys.

Even in adult life, the growth of a hypernephroma may cause a very striking transformation. Thus, in a case reported by Guemes, the patient, formerly a rather handsome young woman, became bald and heavily bearded and looked like a man of fifty years. At autopsy a hypernephroma was found in the cortex of the right suprarenal. There was in addition an atrophy of the ovary, an adenoma and considerable atrophy of the pancreas.

Addison's Disease

Addison's disease furnishes the most familiar example of failure of adrenal function. It occurs at all ages but is most frequent in adults. It is more common in men and among the laboring class.

The lesion of the adrenals is usually a bilateral caseous or fibrocaseous tuberculosis. The tubercles vary in size and may be as large as a hen's egg. Usually the condition is secondary to tuberculosis elsewhere in the body. Recently Mills, of Montreal, showed that hemochromatosis is sometimes accompanied by Addison's disease and that in such cases the zona fasciculata is the only part of the cortex destroyed.

This symptom complex is due in a large measure, if not entirely, to loss of function of the adrenal system. This loss is usually due to destructive lesions in the glands themselves but may conceivably be caused by functional disturbances.

Addison's disease without adrenal disease is noted much more frequently in the older than in the modern literature. In those cases where there was destruction of the adrenals without Addison's disease, it was thought that the accessory adrenals supplied sufficient secretion to prevent the appearance of symptoms.

The Symptoms

The chief characteristics are a progressive muscular weakness, gastrointestinal disturbances, pigmentation of the skin, and a low blood pressure. These are not regular in their onset or intensity. The weakness and pigmentation are the most distinctive features.

Anorexia, nausea, and vomiting usually occur. The stomach contents usually show an absence or decreased amount of hydrochloric acid. If diarrhea is present, it is accompanied by cramp-like pains in the legs as in cholera. The terminal condition sometimes suggests acute peritonitis.

In the circulatory system hypotension is the rule. The pulse is small and weak, but there is rarely edema. Dyspnea on exertion is common. The blood shows secondary anemia. There is usually a low blood-sugar.

There is a sense of prostration and utter exhaustion. There may be apathy and a diminution of memory and intellect. Insomnia, headache, and neuralgia pains are common.

The increase in skin pigmentation appears first in the face and neck; later the hands, the linea alba, and the genitalia are involved. The palms and soles are usually free. Spots of a bluish black color appear on the border of the lips, on the mucous membrane of the cheeks, on the soft palate, and on the sides of the tongue. The pigmented areas simply become confluent and are light or dark brown or bronze tinted. The pigment is iron-free and is deposited in the epithelial cells of the deeper layers. Pigmentation is more often present than absent.

Emaciation is the rule. The blood-sugar is low. Injections of adrenalin fail, as a rule, to produce glycosuria. The basal metabolic rate is below normal.

Course

The average duration is one to three years. The longest case on record lasted seventeen years. In rare instances the course is hyperacute, death occurring in a few days from hemorrhage or thrombosis.

Diagnosis of Addison's Disease

Preceding the stage of pigmentation, the diagnosis of Addison's disease is difficult or impossible. Latent carcinoma of the gastrointestinal tract, early pernicous anemia and tuberculosis may simulate it. After pigmentation is established, the diagnosis is less difficult, although there are a number of conditions other than adrenal disease that may give rise to pigmentation of the skin. In normal persons, there may be deep pigmentation of the skin and mucous membrane. In negroes and other colored races pigmentation of the gums is quite frequent. Pigmentation is common in tuberculous peritonitis, but does not affect the mucous membrane. Abdominal cancer may also lead to pigmentation without adrenal disease. In Grave's disease, in leukemia and pseudoleukemia, pigmentation has been noted. Addison's and Grave's diseases may occur together. Scleroderma may leave a pigmentation of the skin and mucous membranes. It may also be associated with Addison's disease. In vitiligo there is marked pigmentation with areas of pigment atrophy but without any impairment of health. Chronic jaundice may sometimes cause pigmentation resembling Addison's disease. In pregnancy and in tumors and cysts of the ovary pigmentation is common. The discoloration produced by silver (argyria) should also be borne in mind. It is of a uniform bluish-grey or steel-grey color affecting the entire body.

Death from Addison's disease may be instantaneous. Usually, however, it is due to increasing asthenia. Rarely does it take place in coma or convulsions. As has been stated, some cases present, in the terminal stages, the picture of acute fulminant peritonitis.

Treatment

Treatment is of little avail in the majority of cases. Improvement and, in a few instances, cure have been attained by the use of suprarenal extract, as first suggested by Charrin and Langois in 1892. Kinnicut gathered statistics of forty-eight cases of Addison's disease treated by organotherapy. Of these, two were made worse, eighteen showed no change, twenty-two improved and six were completely cured. Schilling observed in a youth of sixteen years, after three months' treatment with suprarenal gland (from one-half to a whole gland daily), the complete disappearance of all symptoms, including the pigmentation. The patient eventually died of pneumonia. Autopsy showed sclerosis and caseation of both adrenals. Daland reports a case successfully treated by increasing doses of adrenalin solution, for which, later, suprarenal gland, in one-Gram doses, was substituted. The patient lived six years after treatment was begun, although when it was started he seemed to be in danger of collapse at any time. Osborne reports two cases of Addison's disease in which temporary improvement was obtained by the combination of adrenalin and pituitary tablets.

Busch and Wright implanted the freshly-excised adrenal of a young pig into a man about thirty-five years of age suffering with Addison's disease. The patient improved, the blood pressure rose and the pigmenta-

tion of the skin seemed to diminish. Two weeks later, however, the patient died in coma.

Taking into account the hypoglycemia in Addison's disease, Grote combined suprarenal treatment with the administration of sugar, and saw better results than when the suprarenal treatment alone was used. This suggestion has much merit.

Probably the terms most frequently used by the clinicians in connection with the adrenals and the condition most frequently met and the one seemingly most scorned by the experimental physiologists is hypoadrenia. A brief description of the etiology, symptoms, diagnosis and treatment follows:

Clinical Hypoadrenia

Etiology:
- Emotional disturbances—
  - Fear, worry, pain.
- Acute infectious diseases.
- Chronic infections.
- Drugs—alcohol, coffee, arsenic, mercury, opium.

Symptoms:
- Muscular weakness.
- Progressive asthenia.
- Low blood pressure.
- Sensitiveness to cold.
- Cold extremities—
  - Weak heart action;
  - Weak pulse—which is usually rapid;
  - Subnormal temperature.
- Gastrointestinal disturbances—
  - Bad taste, anorexia, vomiting, diarrhea or constipation;
  - Mucous colitis.
- Emaciation.
- Bronzing and pigmentation of the skin and mucosa.
- Lumbar and abdominal pains.
- Lowered basal metabolic rate.
- Tendency to syncope.
- Impairment of vision and hearing.
- Psychasthenia, irritability, hallucinations, delirium, convulsions, coma and sudden death.

Diagnosis of Hypoadrenia

Diagnosis of hypoadrenia is based on the history; the symptoms enumerated; an etiologic factor capable of causing the condition; and the physical findings. These are low blood pressure, weak pulse, cold extremities, pigmentation and bronzing. Pigmentation, in my experience, is not a frequent finding in hypoadrenia and when present indicates a severe case or one of long standing. Sergent's white line of adrenal insufficiency is often mentioned. To bring about this phenomenon, the skin, preferably of the abdomen, is selected and on it is traced a geometric figure using a blunt object, as the rounded end of a fountain pen or the finger-tip, and taking special care to avoid rubbing, particularly with the nail. The figure should be made by a simple superficial stroking (one must neither bear down nor scratch). The motion should be deliberate and never rapid. In about half a minute a pale line or band begins to be noticed following the course of the finger. Gradually this becomes more and more distinct and white, at the same time becoming larger, so that, eventually, the line exceeds in size the area actually touched by the finger-tip. This white line attains its maximum clearness in the course of about one minute, and persists for one, two, or even three minutes before being gradually obliterated.

While this phenomenon has been present in all of my cases, it is also said to be present in perfectly normal persons. I understand that Sergent no longer regards it as a sign of adrenal insufficiency.

The basal metabolic rate is usually below normal and the blood-sugar is rather low.

Finally, and most important, the *exclusion of other conditions* capable of causing the symptoms of which the patient complains. Conditions to be thought of in this connection are infections both focal and general. Of the latter, especially tuberculosis and syphilis, and intoxications, such as by lead and mercury.

Differential Diagnosis

Hypothyroidism is accompanied by many of the subjective symptoms of hypoadrenia but its differentiation is a matter of no difficulty. It is more difficult to differentiate hypopituitarism of the anterior lobe, postadolescent, as to time, from hypoadrenia.

Decreased genital function and muscle tone with slow pulse, subnormal temperature, and low blood pressure are taken as the best evidence of a deficient secretion of the anterior lobe; but low blood pressure, subnormal temperature and decreased muscle tone are also present in hypoadrenia. Hypopituitarism is probably accompanied by more subjective complaints indicative of a disturbed nervous and mental state, while hypoadrenia is accompanied by more subjective complaints indicative of a "low" state, both mental and physical. There is more inclination to both mental and physical inactivity in hypoadrenia than in hypopituitarism. The pigmentation of hypoadrenia, when present, is more nearly universal and may, in severe cases, as in Addison's disease, affect the mucosa. The chloasma of hypopituitarism is confined to

the forehead, about the angles of the mouth, and sides of the neck.

The diagnosis of hypoadrenia is on a very uncertain foundation and that of hypopituitarism of the anterior lobe of the adult is hardly less so. The final proof of the diagnosis in both conditions depends on therapeutic confirmation. That is, on whether the symptoms can be relieved by the administration of the gland believed to be at fault.

The diagnosis might well be based on the following data:

1. A considerable percentage of the symptoms of hypoadrenia should be present in the case.
2. The history should show an etiological factor that might reasonably be assumed to cause the condition.
3. All foci of infection and other conditions capable of producing the symptoms should be excluded.
4. I should finally wish therapeutic confirmation of the diagnosis before feeling certain that hypoadrenia *per se* was the cause of the patient's trouble.

Clinical vs. Laboratory Findings

The physiologists have gone to some length to prove the improbability of any such condition as clinical hypoadrenia because hypoadrenalinemia cannot be demonstrated. Yet, no clinical writer ever mentions hypoadrenalinemia except to say that hypoadrenia and hypoadrenalinemia are not synonymous terms in his mind. Sergent, who seems to have been the first writer to use the term "hypoadrenia" and to describe the syndrome to which he applied the term, wrote about it first in 1899, or two years before adrenalin was discovered. He has said repeatedly, that he had no idea the condition was due to a lack of adrenal medulla secretion alone but to an insufficiency of the whole gland.

The fact that the experimental physiologists have not been able to produce the syndrome is unfortunate but does not prove, by any manner of means, that the syndrome as described is not due to a partial insufficiency of the whole gland. It should be borne in mind that they have not been able to reproduce Addison's disease in experimental animals, but no one seems to have questioned that the symptoms of Addison's disease are due to a suppression, more or less complete, of the adrenal secretion.

The clinicians seem to have reasoned thus: if the symptoms present in Addison's disease are due to destructive lesions of the adrenals, with a consequent failure of function, there must be a milder form of adrenal insufficiency accompanied by similar symptoms but in a milder form than those present in Addison's disease. The etiological factors mentioned as causative of hypoadrenia are the same as those found experimentally to cause an increased discharge of adrenin with a consequent exhaustion of the medulla. Hartman has shown that the same factors which cause a depletion of adrenin in the medulla also seem to have a deleterious effect on the cortex.

Further proof that clinical hypoadrenia is not a figment of a disordered imagination was furnished by Cowie and Bevan when they showed that influenza produced deleterious changes in the adrenals.

While a certain amount of convincing evidence can be offered that hypoadrenia really exists, *proving* its existence in a given case is an entirely different matter. It can safely be assumed that the adrenals are depleted in infections, either acute or chronic, and on this more or less empiric basis adrenal therapy might be instituted.

Recently Cannon has shown the intimate relation of the adrenals, *not the medulla alone*, to the regulation of body temperature. From his studies it is not illogical to assume that the sensitiveness to cold and the cold extremities given as symptoms of adrenal insufficiency might easily be due to a lack of, or inefficient function of, these glands.

I do not wish to be understood as saying that hypoadrenia is a rare condition. On the contrary, I believe it is a very common one and frequently met in general practice. I do wish to emphasize the belief that our means of diagnosis are very meager and that in most cases hypoadrenia should be regarded as a complicating factor of some other condition. It may be argued that focal infections produce some of their symptoms by causing a secondary hypoadrenia. This may be true but, even so, the patient will recover faster if the infection is removed and adrenal therapy instituted than if adrenal therapy alone is relied upon.

I use the adrenals frequently and feel that good results are obtained where such therapy is indicated. Like all other endocrine therapy, this is a specific medication and one cannot relieve hypothyroidism or an infected gall-bladder by feeding the patient suprarenal glands.

Treatment

Whole suprarenal, by mouth, in dosage of 1 to 5 grains t. i. d. I frequently combine

it with strychnia and small doses of thyroid. This is especially true in convalescence following some acute infection like influenza. This is done largely because, in my experience, hypothyroidism frequently accompanies hypoadrenia. Patients receiving such a combination recover their usual health much more quickly than those not so treated, so that I am convinced, from a clinical standpoint, that such a procedure is good treatment. The thyroid is never used except in the presence of some signs of thyroid deficiency.

On one hand, the physiologists are to be criticized for their attitude, that because they have not been able to reproduce a syndrone it consequently does not exist: On the other hand, the clinicians are open to the criticism that, far too often, the diagnosis of hypoadrenia has been made before other possible causative factors have been excluded.

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Backaches in Women*

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THE gynecologist and the family physician constantly have the problem of backaches, and constantly they meet the widely-spread impression that any backache in a woman must necessarily proceed from pelvic abnormality. This is furthered by the conception that some members of our own profession appear to have, that, medically, a woman is to be considered as a uterus surrounded and accompanied by a number of other, wholly incidental, anatomical structures which need not be reckoned with in arriving at a conclusion when the question is one of dorsal pain. Indeed, pains of other sorts are at times also ascribed to the all-influencing uterus, the most frequent, perhaps, being headaches. On one occasion I saw a woman who came at the suggestion of her dentist because of a pain in the lower jaw which, as he could find no cause for it, he assumed must be due to something in the pelvis. To what it might have been ascribed had the patient been a man is difficult to say. The oral surgeon to whom she was sent found some recognizable dental pathology, relief of which cured the pain.

Backaches are by no means unknown in men, in whom some other origin must necessarily be found. The specialist who is not at the same time a fairly good generalist is often at a disadvantage. Careful history taking and a painstaking, general physical examination will often enable one to locate the cause of a troublesome backache which will not be found if one too readily ascribes

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all such pains to the often innocent uterus and pelvis.

Causes in Muscles and Bones

We may, for convenience, consider the backaches which we see in groups. There is a considerable group of backaches which are due to a myositis of the back—the socalled muscular rheumatism. In these the woman will, on careful questioning, usually indicate that the pain is not altogether confined to the lower part of the body. Pain of this sort is rather more frequently found in the dorsal and lumbar regions in which the muscle masses are larger. Such patients are often benefited by rest and heat; and one may, at times, get a history of their following an infection or being made worse by a cold. At times some tenderness may be elicited over the area involved. These cases are often benefited by the removal of a focus of infection, often in the throat or jaw.

There is a large group of back pains which find their origin in lesions of the spine and pelvis. One of the commonest of these is sacro-iliac strain. This is frequently seen in the pregnant woman or the woman who has recently become a mother and the observant obstetrician is always on the lookout for it. It is also not unknown in women who are neither pregnant or recently delivered and is easily recognized by its sharply localized character; increased pain on bending forward or lifting; and by tenderness over one or both sacro-iliac joints. It is nearly always relieved by the application of a properly fitted sacro-iliac belt which supports the pelvis sufficiently that abnormal play of the joint surfaces does not occur.

An osteo-arthritis of the spine is a frequent cause of backache and should always be considered when no adequate cause of pain can be found in the pelvis. It is not confined to the lower spine; is stubborn and ordinarily of some duration; and more apt to exist in the older woman. Gynecological treatment or operation is of no avail at all. Usually the cooperation of an orthopedic surgeon will be found of use, as he can, by traction devices, sometimes give these patients more comfort than can otherwise be obtained.

One should never omit to consider the possibility of a tuberculous spine in a painful back not otherwise explainable. The time-honored test of having the patient bend forward while the examiner observes sharply the uncovered back to see whether there is an area of the spine which does not bend as easily as the remainder will often put one on the right track. Failure to recognize a lesion of this sort not only may subject the patient to the annoyance of useless treatment but may cause the proper treatment to be deferred, with the result that a tuberculous process may make headway which prompt treatment might have forestalled.

Causes in the Urinary Organs

No one who has occasion to see any considerable number of women can fail to be impressed with the frequency among them, of infection of the urinary tract. No pain in the abdomen or back, not immediately explainable by other pathology, should fail to cause at least a consideration on the part of the physician of the possibility of some trouble in the kidney or ureter. Hunner has recently pointed out the frequency of ureteral stricture and drawn attention to the fact that many pains, particularly of the abdomen, which seemed difficult of explanation, could be shown to be caused by stricture of the ureter. An investigation for the purpose of determining this question calls for cystoscopy and the passage of a ureteral bougie.

Pyelitis is a lesion frequently found in women and examination for the purpose of detecting tenderness in the costovertebral angle should always be carried out. Suspicious tenderness here, on one side, together with the presence of pus in a catheterized specimen from the bladder makes it necessary to determine definitely as to the presence of a pyelitis which may be done by segregation of the urine. Obstruction to the urinary flow by kinks, aberrant arteries and stone should similarly be sought for, and stone in the kidney itself is, as a rule, easily discovered. Tuberculosis and tumors are to be considered and painstaking investigation will, as a rule, reveal them if present. Movable kidneys, a few years ago, were charged with all manner of symptoms. While today we do not regard a moderately mobile kidney as a matter of great moment, one should at least be sure that sufficient range of motion does not exist to produce pain.

Causes in the Pelvis

Having considered a number of frequent causes of back pain in other locations than the pelvic organs, we may think for a moment about the pains which may be

caused by pelvic pathology. One of the lesions which is most frequently blamed for backaches is retrodisplacement of the uterus.

We are constantly seeing women who either fear they have such a condition because of backache, or who know that such a condition exists and are convinced that it is the cause of their discomfort. A woman with a retrodisplaced uterus and some discomfort in her back is in a frame of mind as a rule which is quite favorable to the suggestion of operation. Years of work with gynecological and obstetric patients have convinced me that very many women are operated upon for retrodisplacements who do not need such a procedure, and who, in some instances, would have been better off without it. We have recently had on our service in the hospital a woman of 25 who has an apparently quite healthy uterus fixed firmly in acute anteflexion by a Gilliam operation. Lack of normal mobility of the uterus has caused her to abort twice at about three and one-half months. A healthy uterus of normal size does not cause backache merely because it chances to point back instead of forward.

Backaches found in women with retrodisplacement occur as a result of pathology accompanying the retrodisplacement, in nearly every instance, and with relative infrequency as a result of the position of the uterus itself. Yet, the mere presence of a backward position is often taken as a sufficient indication for operation. Twenty percent of women have retrodisplacements and very far from all of these have symptoms as a result of the position of the uterus. If, however, the backward position be accompanied by descent, causing traction on weakened pelvic supports, backache may result.

Infections in the pelvis, such as salpingitis, which may produce adhesions of the tubes in the culdesac, causing the retrodisplacement to become a fixed one, may readily be a cause of pain. Cervical infections—endocervicitis occasionally; cervicitis or infection of the deeper tissue of the cervix more frequently—may cause back pain.

Some definite pathology must be present to produce backache and it should be emphasized that an uncomplicated, movable, backward position of an otherwise healthy uterus is rarely a cause of backaches and rarely needs treatment, surgical or otherwise. When infection and its results are present, treatment should be that which will relieve these conditions, and consideration of the retroversion alone will not suffice.

It cannot be too strongly emphasized that a hasty conclusion that a woman with a backache must necessarily have some pelvic disease is frequently wrong and often causes the woman to be subjected to useless treatment, the true cause of the pain being, perhaps, unnoticed. And, again, the mere presence of a retrodisplaced uterus is by no means always an indication for treatment, operative or otherwise.

The situation here, as elsewhere in medicine, is simply that a careful and adequate physical examination is the right of every woman who applies for relief of backache.

The Treatment of Gastric Ulcer and Hyperchlorhydria

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INTEREST in the treatment of gastric ulcer and hyperchlorhydria has grown considerably within recent years, due to the increasing prevalence of these diseases. Digestive trouble, caused by hyperacidity, has been shown to be a primary cause of certain enteric conditions and some heart trouble. This paper deals with three important and recent methods of treatment, viz.:

1. Rest and diet treatment.
2. Protein therapy.
3. Colloidal hydroxide of aluminum.

1. *Rest and diet treatment.* Gastric rest, so far as possible, is of utmost importance in the treatment of gastric ulcer. Cornwall [1], on the basis of long experience, suggested the following: To secure mechanical rest, the patient is kept in bed in the horizontal position for about four weeks.

He is given rectal feeding at first, and after that a diet by mouth which least excites gastric peristalsis, that is, one consisting of small, frequent, fluid meals. To secure a minimum of local irritation, the diet is restricted to articles of food which least excite secretion of hydrochloric acid in the gastric juice. Generally speaking, the treatment consists of an antacid régime, careful mastication and light, easily-digested food which does not require much time for its digestion. Stimulating condiments and alcohol are forbidden; vinegar, citron, spices, meat flavorings, fried dishes, sweets and coffee should be avoided.

Dietetic Treatment

Cornwall recommended the following diet: Exclusive rectal feeding is given during the first three days, water, in teaspoonful doses, however, being allowed occasionally. Always before beginning rectal feeding, an enema is given and a colonic irrigation. In very mild cases the rectal feeding is omitted. The following mixture, at body temperature, in enema, is regularly introduced: Dextrose, 1 oz., strained orange juice, 1 oz., sodium chloride and sodium bicarbonate, each 22 grains, water 9 ozs.

Usually, on the fourth day mouth feeding is begun. The prescription varies according to the severity of the case, and the indications afforded by signs and symptoms. Cornwall used to administer the following:

At 7 a. m., 5 ozs. of milk.
At 8 a. m., the same as at 7 a. m.
At 9 a. m., the same as at 7 a. m.
At 10 a. m., strained juice of fresh orange, grapefruit or pineapple, 2 ozs.; lactose, 2 to 3 ozs.; water, 5 ozs.
At 11 a. m., the same as at 7 a. m.
At 12 noon, the same as at 7 a. m.
At 1 p. m., the same as at 7 a. m.
At 2 p. m., the same as at 10 a. m.
At 3 p. m., the same as at 7 a. m.
At 4 p. m., the same as at 7 a. m.
At 5 p. m., the same as at 7 a. m.
At 6 p. m., the same as at 10 a. m.
At 7 p. m., the same as at 7 a. m.
At 8 p. m., the same as at 7 a. m.
At 9 p. m., the same as at 7 a. m.

This prescription supplies daily about 60 Grams of protein, 60 Grams of fat, 160 Grams of carbohydrate and 1420 calories, besides an adequate amount of salts, vitamines and water.

An additional feeding is often given at 10 p. m. of 1 oz. of olive oil. This brings up the fuel value to 1690 calories, besides supplying a possible laxative agent. In the third week the diet is modified by gradually adding moist, cooked cereals, macaroni, old bread and toast, cottage or cream cheese, eggs and selected vegetables and fruits.

During the fourth week the diet is gradually enlarged both in quantity and variety. After the patient has apparently recovered, he is warned against eating food which directly or indirectly introduces substances which are locally irritating. Later, cream soups, bread and butter, soft foods and possibly bacon may be added. In general, the variety of the diet depends upon the condition of the case.

The Sippy and Other Diets

Numerous diets have been proposed for the treatment of peptic ulcer. The most important are the following:

The Sippy diet[3] recommends frequency of feedings, preponderance of fat and the use of alkalis to neutralize the hydrochloric acid. Under this diet the nutrition of the patient is maintained and strongly acid chyme never reaches the ulcer, but the stomach is kept in a state of constant activity for twelve of the twenty-four hours.

Smithies'[3] diet allows the stomach complete preliminary rest, except for the occasional administration of raw fruit juices. The diet is built up on the premise that carbohydrates require no digestive effort on the part of the stomach, and pass quickly into the duodenum. The foods are not simple carbohydrates, but contain protein in not inconsiderable percentages, and are mixtures of foodstuffs.

Coleman[4] suggested a new diet consisting of glucose-salt enemas which are given throughout and, for the first three days, only water is allowed by mouth. Feeding by mouth is started on the fourth to the sixth day, the only foods permitted being olive oil or butter fat and white of egg. Later in the treatment, yolk of egg and cream may be added to the diet in replacement of a portion of the other fats. He stated that the diet has been in use for twelve years.

In general it is best to arrange the diet for gastric ulcer in accordance with the course of the disease and with the peculiarities and tolerance of the patient. The problem consists in administering a diet which will fulfill the indications for treatment, namely: to remove the chief sources of the ulcer, which are the chemical action of the digestive juices and the mechanical irritations from peristalsis. Therefore, the diet should give the stomach the maximum amount of secretory and motor rest while,

at the same time, it supplies the patient with sufficient food.

Injection of Foreign Proteins

2. *Protein Therapy.* It is known that in chronic inflammations the natural tendency to healing may be artificially increased by means of the action of an acute irritation on the affected area. Thus, a chronic pharyngitis becomes improved under the influence of irritation by iodine preparations. Likewise an ulcer with unsatisfactory granulation is much benefitted by the use of silver nitrate or balsam of Peru.

In general, the basis of protein therapy consists mainly in supporting the body in its fight against the etiological factors by making its protoplasm more active; by increasing its power of resistance and improving its general physical status.

One of the chief means for preventing and healing certain diseases is the parenteral injection of protein substances, especially albumin. Weichardt[5] first performed experiments on animals which proved that the functional ability of the cell is increased by parenteral injections of different albuminous substances. Schmidt[6] first recommended the parenteral injection of protein substances (milk) for therapeutic purposes, namely, for the treatment of chronic arthritis, anemia, etc.

Of great interest was the report of Pribram[7] at the Congress of the Berlin Medical Society, in 1922, regarding the beneficial results in the treatment of gastric and duodenal ulcer obtained by him through parenteral injection of protein. Pribram explains it as follows: The injection of protein is able to produce a general irritation of the tissues—a physiologic stimulus —especially of the affected areas, which are very sensitive to irritation. Hence, the gastric and duodenal ulcer, as a chronic inflammation, demands a stimulus for healing which can be produced by protein. In addition, it relaxes the spasm and relieves the pain. He believes that the process of healing of a gastric ulcer is quite similar to that of any external visible ulcer.

From the point of view of anatomy, the beneficial stimulus to an inflamed tissue is expressed, on the one hand, as a destruction of the weak, exhausted cells, and, on the other, as a stimulation of the remaining healthy cells to a more energetic growth and resistance. However, the nature of these regenerative processes demands that the irritation should not be too strong, in order to avoid damage to the organism; therefore, the application of protein therapy should be kept within carefully considered limitations. Unfortunately, the fact that different inflamed organs react differently to a protein irritation makes the dosage of these substances a difficult subject.

It is believed that the injected protein has a direct beneficial influence on the ulcer. Thus, the injection of protein substance causes a considerable increase of polynuclear leucocytes; the number of lymphocytes is decreased; the absolute number of the leucocytes usually becomes increased and young, nucleated erythrocytes appear.

In the treatment of gastric and duodenal ulcer surgery plays a great role, although it is a serious step. In many cases, therefore, a more conservative method of treatment appears desirable. Protein therapy apparently is one method of practical value. It is sanctioned by many authorities, and there are no reports of any harmful action caused by parenteral protein injection.

Doses and Results of Protein Injections

According to Pribram, the protein injections must be given at intervals of three to four days, in doses of 0.2 to 1.2 Cc.; ten intravenous injections for one course of treatment is the limit. If, after the tenth injection, an improvement does not follow, or if a relapse occurs, then the second course of this treatment gives relief sooner, so that five additional injections are sufficient. In cases where, after two courses of treatment, accompanied with alkaline therapy and proper diet, healing does not ensue, surgical interference is urgently indicated.

Observations have shown that gastric and duodenal ulcer react favorably to the protein treatment, but peptic ulcer following gastroenterostomy and complicated with large perigastric adhesions are not benefitted.

Many cases which were not improved by protein treatment were operated upon by Pribram, who found adhesions between the duodenum and gall-bladder. Upon x-ray examination and clinical observation these adhesions were mistakenly considered to be gastric ulcer.

Several hours after the protein injection, a general reaction (headache, exhaustion, fever, etc.) develops. Often the gastric pain is increased after the injection, but on the next day it decreases. Vomiting is a rare sequel. After two or three injections the general symptoms markedly subside. As an exception, there were cases where reactions, following repeated injec-

tions, were worse than those following the earlier ones. As a rule, as soon as the subjective symptoms of the reaction caused by the injection appear, the subjective symptoms of the disease at once improve, but there is no established relation between the mode and degree of the reaction and that of the improvement.

Some experimenters state that gastralgia is also benefitted by protein treatment. The explanation offered is that the injections relieve the spasm. Pribram uses protein therapy also in cases of pyloric stenosis with good results. Hence, he concludes that most stenosis of this type are due to muscular spasm.

When a complete series of protein injections is administered, a complete disappearance of the symptoms, or at least a considerable improvement, may be expected in most cases. In some cases, however, recurrence is met with.

Cases Treated with Protein

The results obtained by Pribram from the protein treatment were as follows: Out of seventy-seven patients, forty-two cases (55 percent) showed complete disappearance of all subjective trouble; in twenty cases (25 percent) a marked improvement was observed, and in fifteen (20 percent), the treatment was without effect.

Regarding the objective symptoms of gastric ulcer, attention was given to the acidity. Holler[9] observed a diminution of acidity in the gastric juice following protein therapy only in cases where rest and proper diet were also prescribed. Grote and Kalk[8] found no decreased acidity from protein therapy. Thus, out of seventeen cases, only one has shown a diminution of acidity, and a reduction in the duration of gastric secretion.

The roentographs obtained by Pribram show that, at the conclusion of protein therapy, food does not remain in the stomach for the usual four-hour period. The time is considerably reduced or the food disappears.

Grote carried out experiments on more than a hundred cases. Seventy of them were carefully observed by him. Out of these, fifty-two were freed from symptoms altogether and in the remaining eighteen cases the method proved ineffective. These results in general correspond with those of Pribram. Beneficial results were reported also, by Hampel,[10] in thirty-six cases, in which the usual therapy had not been successful. But Kalk, basing his experience on twenty-eight cases, claims that protein therapy has no advantage over the usual treatment consisting of rest, heat, diet, and atropine. He states that by means of this old treatment he often obtained greater improvement or more rapid healing than by the use of the protein therapy. However, he confirms the fact that the injection of albuminous substances in general relieves the pain. Schreuer[11] pointed out that the number of Kalk's experiments is relatively small in comparison with many positive results obtained by other experimenters, and, besides, Kalk's doses for injection were too large (0.5-2.0 Cc. every third day). He believes that protein therapy demands neither rest in bed nor a strict diet. Perutz[12] recommends protein therapy, especially for recurrent ulcer after operation, as well as for *ulcus jejuni*, where it is difficult to perform a second operation. According to his report, the results obtained by the treatment with protein were satisfactory. Kürten and Volhard[13] reported good results from novoprotein in severe cases of pyloric stenosis and scars of the stomach.

Proteins Used

Concerning the kind of albumin, the substance used by the investigators varies. Thus, Koller has used vaccinneurin, the product of bacillus prodigiosus and of staphylococci, either intramuscularly or intravenously, depending upon the severity of the case. The general manifestations of such injections were very severe, such as chill, fever, pain in the extremities and headaches. Fuchs[14] has injected aloan, a milk preparation, which at present is largely used. He injected 10 Cc. intramuscularly every third or fifth day and was trying to administer only a few injections; two to three were the rule. In one case, after the injection, a high fever was noted, which persisted for two days. Therefore, he began to use milk for injection (2.5-3.0 Cc.) which, however, also caused a severe reaction, such as exhaustion and insomnia. Observations have shown that novoprotein, a plant preparation (*Chemische Werke*, Grenzach) has a very gentle reaction on the organism. This substance is very convenient for intravenous injections and has been used successfully by Pribram and many other investigators. The dose should not be great. Beginning with 0.2 Cc. it can be carefully increased to 0.3, 0.4, 0.6 or 0.7 Cc., depending on the case, and in rare cases even to 1.0 Cc. For weak patients and for women, the maximum dose is 0.5 Cc.

Colloidal Hydroxide of Aluminum.

3. *Colloidal Hydroxide of Aluminum.* At the Sixteenth Session of the French Congress of Medicine, held in Paris in 1922, Prof. Roch[15], of the Medical Society of Geneva, reported as follows regarding colloidal hydrate of aluminum:

"Colloidal hydrate of aluminum absorbs hydrochloric acid. It has proven in our hands the antacid medicament *par excellence*, quite superior to bicarbonate of soda, magnesia, subnitrate of bismuth, etc."

Guillermin[16], discussing the value of medication in the treatment of hyperchlorhydria and associated conditions, states that, while bicarbonate of soda is obviously a means of obtaining almost immediate results, its prolonged use is attended by disadvantages, among which may be mentioned the necessity of increasing the dosage as the treatment proceeds, due to the fact that bicarbonate ultimately stimulates instead of subdues the gastric secretion. It is, in fact, purely a symptomatic treatment. Given in conjunction with phosphate, the bicarbonates yield excellent results, but, these, however, do not bring a permanent relief of the condition. Magnesia, talc, bismuth and bolus alba, also give a certain degree of relief, but without affording any permanent satisfaction.

Colloidal hydrate of aluminum is a creamy white, tasteless, amorphous powder, insoluble in water, permanent in air. In the presence of dilute hydrochloric acid, the colloidal hydrate gelatinizes. This is not a chemical reaction, but a physico-chemical or colloido-chemical phenomenon.

The action of the hydrate in the stomach may be demonstrated in a test tube by mixing 1 Gram of the powder with 10 Cc. of water, thoroughly shaking the mixture and then adding 3 or 4 Cc. of dilute hydrochloric acid, again shaking. Almost immediately gelatinization takes place, the contents of the test tube becoming converted into a thick, translucent "gel," containing the hydrochloric acid in physical, not in chemical combination.

The above test also demonstrates the behavior of "Alucol" (The Wander Company), a colloidal hydrate of aluminum, when it reaches the stomach. Adsorption takes place; the colloidal jelly is formed, which, adhering to the walls of the stomach, diminishes their sensibility. At the same time the acid reaction necessary for peptic digestion remains normal.

The clinical observations and results reported by Guillermin and others have proved that "Alcucol" is of great value as an antacid. Furthermore, it has a marked sedative effect upon the gastric mucosa. Guillermin, in fact, considers the product a specific in the treatment of hyperchlorhydria.

With regard to alkaline medication, recent investigations have shown that toxic symptoms often arise as the result of such treatment.[17] It is believed that alkaline drugs render pepsin inert as a digestant of protein and cause the passing of a part of the protein elements into the intestine incompletely hydrolyzed into the amino-acid end-products required for absorption. Some claim that if the administration of alkaline drugs is long continued it leads to nutritional defects, since they destroy the important vitamine, water soluble B. Further, by destroying the antiputrefactive power of the hydrochloride acid, alkalis favor fermentation and the formation of irritant organic acids. It is further pointed out that alkalis, by merely neutralizing hydrochloric acid, fail to prevent systemic reabsorption of the acid radicle (Cl) and hence ultimately stimulate the formation and secretion of HCl. Palfrey[18] has recommended the avoidance of carminatives, for the reason that they give temporary relief only at the risk of a continuance of the irritation which has in part been the cause of the original complaint.

Advantages of Colloidal Aluminum Hydrate

The advantages claimed for colloidal hydrate of aluminum may be summed up as follows:

1. It neither hinders proteolysis nor causes destruction of any food element or factor. Hence, "Alucol" affects in no way the normal processes of nutrition.

2. It interferes in no way with the normal antiputrefactive function of the gastric juice.

3. It absorbs excess of hydrochloric acid from the stomach, the acid-containing mass passing through into the intestines and being finaly evacuated from the lower bowel. Colloidal hydrate of aluminum, therefore, actually removes from the system the causative acid radicle (Cl) instead of merely temporarily neutralizing it, and so permitting reabsorption, accumulation and consequent recurrence and aggravation of the symptoms of the disease.

4. It covers the gastric mucous membrane with a layer of gelatinous mucilage. This layer exercises not only a protective

influence but has a mildly astringent action, a distinct healing and sedative effect, and allays irritation by absorbing acid and other irritants.

The dose of colloidal hydrate of aluminum recommended is 15 grains (or two tablets) taken half an hour before and half an hour after each meal. In prescribing the product, it is well to instruct the patient not to drink excessive quantities of liquid during the mealtime periods at which the doses are taken, for, by so doing the stomach contents are diluted and colloido-chemical absorption rendered less rapid and effective.

Colloidal hydroxide of aluminum can be taken over a long period of time without undesirable secondary effects. Thus Guillermin administered the product in a case of hyperchlorhydria continously for more than two months. The result was satisfactory. The painful symptoms disappeared entirely and no ill effects ensued.

As a matter of fact Guillermin considers colloidal hydroxide of aluminum a specific. He reports a case where the radiograph indicated ulceration of the stomach with decided dilatation and a slight stenosis of the pylorus. The gastric reaction showed total acid 4; vomiting was frequent; traces of blood were found in the feces; the spasmodic attacks were frequent and very painful. He obtained rapid and unexpected improvement by giving colloidal hydrate of aluminum. From then on the patient regained activity and enjoyed a far greater degree of comfort. The attacks, the feeling of painful hunger and "heartburn" completely disappeared and this patient, who was very thin, regained, in several months, 20 pounds in weight.

Roch has shown that colloidal hydrate of aluminum can also be used without any inconvenience as a means of effecting precision in the diagnosis of the gastralgias.

The following are some reports of cases treated by the writer with colloidal hydroxide of aluminum:

Case Reports

Case 1. C. B., age 32, single. Three years ago first noticed pain in the epigastric region, also "heartburn." He consulted many doctors, who, by x-ray examination, diagnosed gastric ulcer. He was treated by dieting, bicarbonate of soda and magnesia, resulting in a temporary and incomplete relief. He consulted me in 1922 complaining of pains after meals, tenderness on pressure and nausea. I administered hydroxide of aluminum, 90 grains a day, for a period of two weeks in conjunction with proper diet. Complete relief was obtained which lasted for several months. Later on, however, a slight reappearance of the symptoms being noticed, he was ordered to take the same drug for a month and to diminish it gradually. Since then he has had no further return of his malady, being, however, instructed to use care in the selection of his diet and avoid condiments and indigestible foods.

Case 2. L. R., age 51, a laborer. For more than ten years he had suffered from frequent acid eructations, nausea, vomiting and severe pain after eating. The patient was treated for *ulcus ventriculi* by diet, bicarbonate of soda, magnesium oxide and milk of magnesia. This treatment relieved him temporarily, but later on the bicarbonate of soda and magnesia were without effect. When he consulted me in 1923 he complained that he was hungry, but feared to eat much, because he knew that a full meal would cause him to suffer later. He felt a burning discomfort in the epigastrium and suffered from acid eructation. The administration of hydrate of aluminum, in conjunction with a diet, caused all these symptoms to disappear for several months. The patient is still taking the drug periodically, when some symptoms return. His physical status has since greatly improved and the acid eructations have disappeared altogether.

Case 3. R. C., age 48, who was under treatment for three years for hyperacidity. She was complaining of "heartburn," acid eructations, and gas in the stomach. She was ordered small-bulk, dry diet, in six meals, and to avoid all food likely to cause irritation. Milk of magnesia and other alkalis had provided marked relief, but after several months the patient was not satisfied with their effect. Later spasmodic attacks and epigastric pain developed, accompanied by vomiting and sometimes diarrhea. As trichiniasis was suspected, male fern was ordered for her in the hospital, but without success. Belladonna and atropine were useless, but the administration of bile preparations (glycotauro tablets — three tablets three times a day before meals) was of benefit for several months. Finally, in 1923, hydrate of aluminum was prescribed for her for a period of three weeks and a rapid improvement followed. The patient is still under my control for other diseases (climacteric), but she is free from symptoms of hyperacidity.

Case 4. J. B. A., a man, age 63, said to have suffered from stomach trouble for more than twenty years. The last year he had much pain, frequently resulting in vomiting. After eating he suffered from "heartburn." Eructation gave little or no relief, but after vomiting he felt better. The patient had consulted many doctors. He frequently used sodium bicarbonate, but recognized that it was only an aid in tiding over a single attack of pain. Charcoal, magnesia and bismuth did not give marked relief. The administration of hydrate of aluminum gradually caused a decrease of the symptoms, which finally disappeared entirely. The patient states that he is cured.

Case 5. L. K., a man, aged 35. He has been under treatment for about three years from meteorism. He complained of epigastric pressure and digestive discomfort. Sometimes, he stated, the gas oppressed his heart and caused dyspnea. As he had kidney trouble alkalis were avoided to prevent toxic symptoms. I administered a solution of silver nitrate (0.12 Gm. to 200.0 Cc.), a tablespoonful every three hours and a diet was prescribed. However, the patient paid no attention to the prescribed diet and the drug gave but momentary and incomplete relief. Hydroxide of aluminum was finally ordered with very gratifying results.

In one case of nervous dyspepsia the administration of hydrate of aluminum had no beneficial effect.

Conclusions

1. Rest in bed is essential to the treatment of acute forms of gastric disease. It is also essential in the chronic and active types. Further, restriction of the food intake has been proven distinctly favorable to prognosis.

2. Parenteral protein therapy, in many instances of gastric and duodenal ulcer, has a beneficial influence leading, sometimes, to complete recovery. However, gastroenterostomy gives the best chances for permanent cure. The indication for surgical interference is a question that cannot be settled by any hard and fast rule.

3. The number of clinical observations based on protein treatment are as yet insufficient; hence, a definite conclusion regarding its value as a specific treatment cannot be drawn at present.

4. A further study of the chemical nature of protein and its allergic properties, checked by new experiments and clinical observations, is necessary to elucidate the rationale of protein therapy and the technic for the use of protein in the treatment of disease.

5. Colloidal hydrate of aluminum has a distinct value of the treatment of hyperchlorhydria, gastric ulcer, fermentative dyspepsias with gastrointestinal flatulence, acid eructation and other symptoms common to gastric disease. It gives not only temporary relief of the symptoms but in many cases leads to permanent cure.

6. Colloidal hydrate of aluminum is preferable to alkalis in the treatment of these maladies. It causes no after effects, and can be administered for any length of time, depending on the condition of the case. It affects in no way the normal processes of digestion when taken in the prescribed doses.

7. The pharmacological effect of this drug in all conditions associated with hyperchlorhydria is worthy of further experiments and clinical observations.

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Indications and Contraindications for Electricity in Medicine

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THE reason why electricity is such a valuable therapeutic agent is that with it we can produce practically any manifestation of energy known; for example: chemical changes, thermal changes, stimulation, sedation, etc.

In order to make it a definite remedy, we must determine its indications and contraindications and, just as important as these, if not more so, we must learn its limitations. Knowing these, we will not then be attempting to do the impossible.

To study and understand the actions of the various electrical currents on the human body, we should have a thorough understanding of their physics. If they follow definite physical laws, we can be almost certain that they will act similarly physiologically.

We must have a basis to work upon, that is as to classification of currents, and that basis must be a physiological one.

We find fundamentally that nature pursues a very definite course in overcoming disease, let us say toxemia or infection, and this method gives a foundation for study. To explain, mechanically, she whips up the circulation to get the fighting forces to the offender, and also to drain away the decomposed products; she destroys by some manifestation of chemistry; she hastens destruction by means of thermal changes—inflammation locally; fever generally.

We will take these three fundamental actions as a guide and select currents specific in action for the classification.

Chemical Effects

We find the galvanic to be the only current to produce gross chemical actions. If we place the two poles in a liquid or semiliquid (for example, water) and sufficient current be turned on, the water will split into its elements, oxygen and hydrogen, the former collecting at the positive, and the latter at the negative pole. If we now apply the current to a block of ice, no action is observed. Here we strike a definite physical limitation which we must apply physiologically. Do not try to treat osteomyelitis with the galvanic current. You will be able to produce some results along a fistulous tract leading to it, but to clear up the bone involvement itself you will find the galvanic current falling short of the mark.

Suppose we apply the two poles, about two inches apart, to a potato and turn on a large amount of current, too strong for the human body. The results noted are as follows: the positive pole produces a marked acid reaction extending toward the negative, about one-fourth of an inch, and ending in an almost definite line; at the negative pole a marked alkaline reaction results extending about the same distance. Between these two points we have been unable to detect any changes by the various chemical tests. A slight thermal increase was noted, but so small that it can be disregarded, for when thermal action is needed, other currents produce it better.

Our attention has been called repeatedly to another intrapolar action which is not generally recognized, and whose use we speak of to condemn. The galvanic current used today is taken from a motor generator and is not a real continuous current, it is in reality composed of a large number of very fine and rapid interruptions. The result is that frequently an obtunding effect may be produced similar to the continuous rapid sinusoidal, a method fast becoming obsolete, because it is a fatigue method that is destructive and not reconstructive therapy. A very recent occurrence called attention to this treatment. A Montreal physician relieved, for a short time, a case of tic douloureux by applying the positive pole (which is supposed to be sedative in action) over it. The following week a doctor in Detroit told us of relieving the same condition with the negative pole. In both cases the relief was followed by a return of the trouble, worse than before. Both physicians thought that they were obtaining results from the polar effect of the current. Physical demonstration proves it to be an impossibility, for the galvanic current to produce its polar (chemical) effects sufficiently deep to reach the gasserian ganglion, even with a dose of current which would be destructive to the skin. Both cases were relieved by opposite poles which eliminates the chemical effect. The truth is that both cases were obtunded, as by the continuous rapid sine

method; and both cases followed the usual rule of that method, return of the trouble worse than before.

All chemical elements have a definite electrical reaction, either positive or negative in character. We take advantage of that great law, "Likes repel; unlikes attract," and use the galvanic current to drive remedies into the tissues, by repulsion, for their chemical effect. This is termed cataphoresis. We find by actual tests on animals, and the potato, that, with destructive doses, this is about the same as the depth of chemical action (slightly less).

I believe you can see the fallacy of driving salicylates into the middle of a joint, for arthritis, with the negative pole (the salicylates are electro-negative). Of course, there is some penetration of these salts by absorption, but we have to admit that it is a poor way to administer them. Occasionally or apparently, some cases of arthritis are benefited; if so, the benefit usually comes from counterirritation of the skin or the obtunding method mentioned above. If counterirritation is what you are after, use a mustard plaster, for it is better and cheaper.

The next thing of importance is the polar actions of the current. The positive is supposed to be sedative. It is a vasoconstrictor — stops hemorrhage, dries discharge, hardens tissue, etc., while the negative pole produces opposite effects.

While it is well to know the polar actions, still, for diagnosis, we will frequently be misled unless we remember that the polar action is the result of the chemical action, and we should select the pole to be applied according to the chemical reaction to litmus of the tissues to be treated. If the part to be treated is acid, the active electrode should be the negative pole and vice versa. This is much more definite than to go by symptoms. Two cases treated in the same day are good examples for explanation. Both were cases of acute proctitis; both suffered severe burning, pain, irritation, etc.; one reacted markedly alkaline and the other acid to litmus. The first was relieved by an intrarectal positive galvanic cataphoresis of kino-glycerite; the other by a negative galvanic cataphoresis with picric acid.

The valuable field of action of the galvanic is the mucous and skin surfaces, abscess cavities, etc. It is extremely valuable for local infections for two reasons: first, chemical, because changing the reaction of the tissue in which germ life is working tends to inhibit or kill that germ; second, by the process of cataphoresis we can drive various remedies into the tissues for both their germicidal and healing effects.

Mechanical Effects

The next class of currents are those which are almost wholly stimulating in character. They are the faradic and sinusoidals, and may be termed our electrical tonics.

Both are alternating currents, i. e., first positive and then negative; therefore, there will be no polar or chemical effects.

The faradic is very irritating in character and except in superficial conditions is ineffective. It is rapidly going out of use, being replaced by the sinusoidals, which will do all the work of the faradic and more. They are not so abrupt in character; are much less irritating; and have sufficient power for good penetration, thus producing deep as well as superficial effects.

We have two main classes of sinusoidals, according to production, which, physiologically, have some differences of action. While all of them are stimulators, they are comparable to the halogens (iodine, clorine, bromine, fluorine), i. e., each current has a specific action.

The two groups are first the A. C., or rapid group, which has a speed of 1800 to 3600 cycles per minute; the second, the D. C., or slow group, which has a speed of 5 to 200 cycles per minute. The first is taken from an alternating current generator while the second is made by passing a galvanic current through a mechanically controlled rheostat which gives a much slower rise and fall of current.

Let us see what the actions of these two groups are upon tissue. First the A. C. group travels at such a high speed that the tissues cannot adjust themselves to the changes, which results in irritation. Irritation expresses itself through the nervous system, and thus we find, in actual practice, their best action.

As mentioned before, the continuous A. C. current, or rapid sine, is used to relieve pain by tiring out the reflexes. This is usually not a good practice, as it is a fatiguing method. In the majority of cases the trouble returns worse than before.

In order to get a true nerve-tonic effect from this current, it should be interrupted so that the tissues treated get a period of stimulation followed by rest. This current is called the interrupted rapid sine. We have another class of rapid sine currents

called the surging sinusoidals which can be used for nerve tonic action, but they are not usually so effective, for the main reason that they do not give a sufficiently long period of rest.

When dealing with the various tissues, particularly the viscera, we find that, for best effect, the current interruptions should be in rhythm with the body. We know that the pace maker, i. e., the mechanics of production and maintenance of normal tone, is by the rise and fall of intraabdominal pressure, which, of course, is directly controlled by respiration. By means of an apparatus called the respiroidal interrupter, we can produce and deliver, when desired, a current directly controlled by respiration. The current is an interrupted rapid sine, but is called a respiroidal current to differentiate it. It is the best nerve-tonic current of all.

The second, or D. C. group, has a somewhat different field of action. First, it is much slower in action, and the tissues can adjust themselves to the current much easier; therefore, there is less irritation and consequently less nerve stimulation from it.

The slow sine group is made from the galvanic and there is a tendency to chemical effects. If the first alternation is positive as it goes into the tissues, it starts producing acid chemical changes. It scarcely gets started, when the following negative wave neutralizes it, with the result that there is no chemical change produced, but there is a *stimulation of chemistry*—first acid biochemistry, and then alkaline biochemistry—i. e., first anabolism then catabolism; in other words, metabolism. Practice shows these currents to be true metabolic or biochemical tonics. Remember, a tonic is for stimulation, not to overcome disease.

The surging galvanic current, which is not a true sinusoidal, has a similar action and we class it with the D. C., or slow sine group. By selecting either the negative or positive pole, we may stimulate either phase of chemistry. Therefore, we label it the specific biochemical tonic.

Thermal Effects

The high frequencies are the currents used for thermal effects. There are three prime high frequency currents; first, D'Arsonval which is of low voltage, high amperage, high frequency, and is the best current to use where heavy heat effects are desired; second, Tesla, which is a medium voltage, medium amperage current, and is the better current where a sedative quality of current is desired; third, true Oudin which is of very high voltage and very low amperage. Its field of action is limited mainly to the neuroses.*

The true Oudin is not of much therapeutic value. The low voltage high amperage and the medium amperage currents are all that we use. The heat effect in the tissues produced by the high frequencies is not a conductive heat but is frictional in character. The total heat produced is dependent upon three prime factors: resistance of tissues, i. e., the greater the density the more heat is produced; second, amperage: quantity of current passing; and voltage: the force which drives the current through.

The process of heating locally is called diathermy; medical when used for reconstructive purposes, surgical when for destructive purposes. The process of heating the body in general is called autocondensation. When using heat for therapeutic effects, we may divide it into two main classes: first, sedative: to quiet and relieve other active processes, i. e., functional disturbances; and second, stimulative heat: to stimulate biochemistry, in the attempt to overcome chronic and organic pathology. In many conditions we may have to do both. Always relieve the functional first.

The high frequencies are probably the most powerful electrical remedies because with them we can use very high voltage, which means deep penetration and deep therapeutic effects.

Their effect is mainly thermal. With them we may increase or decrease chemical action, but, if the chemical abnormality is sufficiently severe, nature will not be able to change it, even after a course of high frequency treatments. For example, take an old chronic acid endocervicitis; we may improve the inflammation and very quickly overcome the infection; yet, if the secretions are tested, the strong acid reaction will persist even though the condition seems apparently cured. If a few galvanic treatments are not given to overcome this condition, the trouble is likely to recur, usually in a short period of time.

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*Many manufacturers make apparatus labeling the medium voltage current Oudin, when really it is a Tesla. The true Oudin, on a short at full capacity, will give a meter reading of about 200 milliamperes, while the Tesla on a short delivers 1,000 to 1,500 milliamperes. For best therapeutic effects the D'Arsonval on a short should have a voltage of 10,000 to 15,000 (jump spark of ¾ to 1 in.). Tesla should have a voltage of 25,000 to 35,000 volts (jump spark 2 to 3 in.). The true Oudin should have a voltage of 60,000 to 90,000 (jump spark of 4 to 7 in.).

We may summarize the currents and form the following classification:

Chemical = Galvanic

Indications:

- Positive: Acid—Abnormal Alkaline Biochemistry
- Negative: Alkaline—Abnormal Acid Biochemistry

Mechanical

- Faradic: Superficial Massage and Stimulation
- Sinusoidals
  - A. C. or Rapid Group
    - Interrupted Rapid Sine, or Respiroidal; Nerve Tonic
    - Surging Sine: Superficial and Deep Massage
  - D. C. or Slow Group
    - Slow Sine: Functional or Biochemical Tonic
    - Surging Galvanic: Specific Biochemical Tonic

Thermal = High Frequencies

D'Arsonval (Low Voltage) (High Amperage)	High Heat {Stimulative Diathermy}	Organic Pathology (Chronic)
Tesla (Medium Voltage) (Medium Amperage)	Low Heat {Sedative Diathermy}	Functional Pathology (Acute, etc.)
Oudin (True) (Very High Voltage) (Very Low Amperage)	Neurosis. {Not of much use, as other currents will do all that this will}	

Visual Disturbances in Pregnancy

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AS THE surgeon is identified with the scalpel and the pathologist with the autopsy table, so the ophthalmologist is almost always associated with the ophthalmoscope.

V. Helmholtz, in giving us the ophthalmoscope, has unfolded to us a new world. This simple instrument has raised the importance of ophthalmology, and enhanced its value to medicine generally. Exact diagnosis, in medicine, surgery, neurology, etc., is greatly indebted to ophthalmoscopy. It constitutes, today, the best discipline in exact observation of pathology in the living.

On account of its transparency and accessibility, the eye has been the hunting ground of the pathologist. Pathologic changes, usually hidden from view, could be seen and watched in the eye from day to day. When Heine, the poet, said, *Die Augen sind der Seele Fenster*, he gave a very descriptive figure of what the eye meant in expressing the moral, esthetic, ethical or sentimental nature; and, if he had added another word and said, *Die Augen sind der Seele und des Körpers Fenster*, he would have said, in a few words, what I would like to bring home to you in this paper, i. e., the value of

ophthalmologic examination in all bodily ailments.

We see with the brain. The eye is only the tactile extremity by which the brain comes in contact with the external world. The eye, like the photographic camera, receives the impressions of the waves reflected by various objects; but, unlike the camera, transmits them to the visual centers in the cortex of the brain and there the impressions are brought to our consciousness and interpreted as vision. This fact is very impressively illustrated in uremic amaurosis. The patient has no eye-ground pathology; no intraocular lesion; pupillary reflexes are normal; and yet the patient suddenly becomes blind. The visual centers in the cortex are saturated with the uremic poison and rendered powerless. The impressions are received on the rods and cones of the retina; the visual purple may have undergone its chemical changes; but the percipient elements of the retina and the photochemical substance alone cannot see.

The visual disturbances may arise suddenly in the midst of an uremia, or in the course of what is known as the "albuminuria of pregnancy", from vascular disorders affecting the circulation of portions of the retina, as well as the optic nerve, as a neuroretinitis, presenting characteristics distinct from those associated with the albuminuria of pregnancy, and probably dependent upon the action of toxic substances generated by the gravid uterus.

Conjunctival hemorrhages occur and cause much alarm, because of their spontaneity, frequency, and amount. In such cases, inquiry into the state of the woman's cardiovascular system may detect disease and, serious changes in health, in the later months of pregnancy, may arise. Such hemorrhages may be the earliest signs of an approaching virulent toxemia.

Albuminuria during pregnancy is not uncommon, varying from 2 to 20 percent; yet, albumin may not be found until late. However, the urine is passed in diminished quantities and, if it contains albumin, will show hyaline, and, rarely, granular casts with fatty degeneration of the epithelial cells. The retinitis of pregnancy depends undoubtedly upon the toxemia which is responsible for the kidney disturbance, yet it should be considered as distinct from the retinitis of nephritis.

By far the most important disturbance of vision is that caused by the retinitis of pregnancy, which is most frequently observed, and oftentimes accompanied so disastrously by exudates and hemorrhages. The onset of the symptoms is relatively prolonged, the usual first symptom being the seeing of a black spot when looking at a fixed object. Because of the tendency to a lack of stability of the nervous system in many women during pregnancy, the possibilities of an hysterical amaurosis must not be overlooked. Disturbed vision, as for example polyopia, which increases, and then suddenly disappears, may be a manifestation of hysteria; yet, hysteria should be the last affection thought of in pregnancy.

Visual disturbances in pregnancy and in the puerperium, should always suggest the existence of a toxemia and should call for a careful examination of the field for color and also ophthalmoscopic examination, in order to determine the existence and the extent of the lesions in the retina and optic nerve. The attack may last but a few days, and the sight be recovered. In subsequent pregnancies the symptoms may be repeated, in each recurrence with a slight increase in the symptoms, producing decided damage to the retina and optic nerve. Detachment of the retina may occur and lead to complete blindness. Especially is this complication likely to occur in myopic patients (high myopia), with retinitis, during the strains of a prolonged labor.

Uremic amaurosis is rarer than retinitis of pregnancy. In 13 cases of eclampsia with nephritis gravidarum, Litzman found the disease 3 times, while Schmori, in 65 autopsies of eclamptics, noted, in 58, thrombi in the smaller cerebral vessels. Perhaps half of the eclamptic cases complain of disturbance of vision, but few will show evidence, and; among these, the star figure is rarely seen in pregnancy.

The prognosis of eye lesions in pregnancy is usually better than in the nonpregnant state, but this depends upon the location of the lesion, and whether or not the pregnancy is terminated by artificial interruption. On the other hand, circumstances being equal, the outlook is more favorable, the more completely and the more suddenly blindness occurs during pregnancy.

As might be expected in so grave a state of complicated pregnancy, authorities differ as to what each considers imperative. By one group of observers one is advised to induce premature labor in all cases of retinitis, while another counsels the conservative course—of artificial termination only when the retinal complication is very severe.

The severity of retinal hemorrhages and the permanency of these lesions depend upon their location. The life, future health, and vision of the woman are, therefore, safeguarded by an interruption of the pregnancy. The prognosis as regards sight is not so good in these cases, though, as regards life, it is better than in the nephritis of the nonpregnant. Sight, however, does not improve until pregnancy is terminated. Without the induction of labor, the prognosis is most serious. Cases which go on to term show the largest proportion of deaths, and the greatest damage to sight.

The ophthalmoscopic examination, when positive, enables one to make an early diagnosis of the underlying condition, which is sometimes otherwise difficult or impossible. A competent ophthalmologist should be called in consultation and his decision to terminate the pregnancy should be concurred in. The sight of the mother is of much more importance than the life of the child; that is to say, when the sight is being destroyed by disease caused by the pregnancy, and the termination of the pregnancy may check if not cure the disease. An interval of two years should elapse and complete recovery occur, before a new pregnancy should be permitted and, in such a case, the patient should be closely watched from conception to delivery.

When ocular symptoms complicate pregnancy, the importance of careful and frequent observation of the blood pressure, which, by the way, ranks above uranalysis, can not be too strongly emphasized. A negative ophthalmoscopic finding does not mean absence of visual disturbances and should not be considered as being a complete ophthalmologic examination. Perimetric measurements of the field of vision, for colors particularly, and the searching for a central scotoma (blind spot) is the only means of detecting a retrobulbar neuritis, or toxic amblyopia.

Pooley urges that in all cases of pregnancy it is desirable not only to have the urine and blood pressure examined from time to time but also to make a routine ophthalmoscopic examination, since a large number of patients having lesions of optic nerve and retina make no complaint of loss of vision, although secondary atrophic changes may lead to blindness.

So far as they occur together, retinitis of pregnancy and albuminuria should be dissociated, for it is an open fact that either may, and frequently does, exist without the other. Therefore, an albumin-free urine need not rule out a diagnosis of toxic retinitis in a pregnant woman; and eclampsia, which is probably an excessive and fulminant evidence of toxemia, may burst forth without the urine having given any previous warning.

In conclusion, I would like to say that the cooperation of the ophthalmologist should be resorted to more often, particularly in cases with cardiovascular-renal diseases. The general practitioner should bring his knowledge, experience and common sense to bear on all ophthalmological problems with which he may be confronted.

Surgical Seminar

Conducted by GUSTAVUS M. BLECH, M.D.

Discussion of Surgical Problem No. 2

Recapitulation. The problem was published in the February issue and was submitted for discussion by Dr. Fred L. Holcomb, of Coldwater, Kansas, and essentially was as follows:

A farmer's wife, aged 41, has a temperature of 104° F., fast pulse and aching all over the body, especially intense headache.

In a few days these symptoms disappeared, except the intense headache. The temperature is now subnormal.

The patient has a badly coated tongue, foul breath, loss of appetite, icterus and general prostration, so much so that one of the physicians in attendance diagnosed typhoid fever or intestinal influenza.

Three weeks later the intense headache still persisted, but the patient left town, to return a month later, when she complained of intense headache, nausea and vomiting. The bowels did not move freely. Temperature still is subnormal. Two days later her temperature rose to 100° F. and continued to rise up to 108.5° F., the next afternoon, when the patient died.

There never was any delirium or unconsciousness except preceding death, but throughout her last illness she had been unable to think logically.

The requirement calls for your diagnosis and reasons therefor.

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Discussion by General Geo. Acheson, St. Martins, N. B., Canada. The following remarks are not intended as a solution but merely as a general commentary.

The data in this case are somewhat fragmentary and hardly warrant a definite diagnosis, but they are sufficient to show a marked toxemia, with the nervous system the principal objective of the toxic process.

The history of mutilating surgical operations (General Acheson has reference to an appendicectomy and hysterectomy and one-sided salpingo-oophorectomy performed six and three years ago respectively, as stated in the problem in the February issue.—G. M. B.) leads one to suppose a *via resistentiae minoris* and, therefore, increased susceptibility to toxins.

The headache, nausea and vomiting, mental hebetude and temperature variations lead one to suggest intracranial tumor as a probable diagnosis, or, possibly, cerebral abscess. The initial acute symptoms may reasonably be ascribed to influenza or some similiar acute infection.

All symptoms except the headache disappeared in a few days, but we may suppose that some infective organisms were localized somewhere within the cranium, to come to sudden activity subsequently.

Information that might have been given by a pathological laboratory would, doubtless, have been of much assistance in arriving at a diagnosis *intra vitam*.

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Discussion by Dr. Emil C. Junger, Soldier, Iowa. The initial symptoms of this problem appear to me like a mild influenza infection, complicated by a thrombosis of some of the veins of the ethmoid, and, in turn, involving the meninges. I reason that the infective process extended and developed into an abscess of the brain.

In this connection it is interesting to remark that I have had scalp infections in diabetic patients whose temperature curve would run above and below normal for weeks until a general sepsis or involvement of deeper structures terminated the malady by death with increased temperature preceding the end.

At the same time I think it is prudent to think of miliary tuberculosis, as a possible factor in this particular case.

Finally, the type of influenza infections varies from time to time. As an illustration I have seen, this winter, several hundred cases of "grippe", but in this epidemic I have not seen a single complication, such as sinusitis, meningitis, empyema, mastoiditis, etc., complications which I have seen in similar epidemics in the past.

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Discussion by Dr. Isaac E. Crack, Hamilton, Ont., Canada. From the very meager data given in this case, I would say that this patient at the onset had an influenza which caused the temperature of 104° F., rapid pulse, pains and so on. This was later

complicated by a brain abscess, which diagnosis would account for the headache, subnormal temperature, vomiting, constipation and changed mentality. The rapid rise of temperature shortly before death was in all probability due to the rupture of the abscess. Ophthalmoscopy, a blood count and lumbar puncture would have helped very much to clear up the diagnosis.

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Discussion by Dr. M. K. Dermenjian, Detroit, Mich. When I see a patient who has rise of temperature, rapid pulse, aching all over the body and intense headache, such as is presented in the present problem by Dr. Holcomb, I carefully look for tonsillitis, frontal sinusitis, influenza, encephalitis and meningitis. The rapid pulse speaks against typhoid fever. But, when the symptoms disappear, three or four days later, and there remains intense headache, general prostration and slow mentality, I take into consideration: (1) Nephritis; (2) some brain lesion such as tumor, abscess, hemorrhage, embolism, softening and meningitis.

A thorough urinary analysis would confirm or reject a renal lesion, while a lumbar puncture would be a great help in the decision about a brain lesion. Examination of the fundus oculi and the presence of a choked disc spells a brain lesion. Vascular hypertension is present in a renal as well as a cerebral lesion.

Accordingly, my diagnosis founded on the fragmentary data is: an acute infection, probably a frontal sinusitis followed by a brain lesion. The only question that needs comment pertains to the low temperature that began after the first few days of the illness and its sudden and terminal rise to an unusually high degree. A walled-off abscess of the brain would explain the low temperature. Softening and spreading of the abscess would equally explain the hyperpyrexia.

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Editorial Comment

First of all, I want to express to Dr. Holcomb my sincere thanks for having sent us this very interesting problem. I may add that the doctor kindly informed me, in a few words, that his own diagnosis was that of a brain tumor.

The question arises why Dr. Holcomb has given us fragmentary data and why he has not furnished laboratory findings. If he had done that, there would have been no problem and Dr. Holcomb has purposely presented the case for this department without giving the data so essentially needed to arrive at anything like an exact diagnosis. But in other respects, the data are not sufficient, as we shall see.

The case under consideration has two phases. One pertains to the time, say, within two or three weeks after the acute attack, and the other pertains to the present aspect. We know the woman died. That removes much doubt as to the seriousness of the character of the case during the first phase. It makes the analysis easier because we have a *post hoc, ergo propter hoc* situation clearly before us. Even if we closed our eyes to the final lethal issue, we are still prejudiced when it comes to the first phase and, that is the phase we should be most interested in, because then and then only could we have accomplished anything therapeutically.

I am glad Dr. Holcomb has given no laboratory findings. I have been the recipient of a number of letters from readers practicing in small villages and hamlets, miles from civilization, who asked me to come out and see their work; combatting an epidemic, delivering women, amputating and opening an empyema of the chest all in one day, and no more facilities and time than to test the urine for albumen and sugar. These letters seem to caution me that I have no right boasting about diagnosis, because we have nickel-in-the-slot facilities. Throw a five dollar bill or more into slots labeled "X-ray Laboratory," "Pathologic Laboratory," Neurologic Consultation Office" and out comes a slip and when you piece the slips together, the rest will not cause you a headache.

In war as in peace we can get along with little, but when we have luxuries available we would be fools to turn aside—we take all we can and do the best we can.

Dr. H. describes the history and the grippe attack very well. Is there any connection between the history referring to the appendectomy and the hysterectomy plus mono-salpingo-oophorectomy and the last illness? General Acheson says perhaps, because there is a lessened power of resistance. I am sure no one will charge me with disrespect for General Acheson's learning and judgment, but I disagree with him. If there had been a serious infection I can see the relation; if there had been malignancy I see a relation; but Dr. Holcomb gives no history of the former, and if there

had been malignancy he would have done a pan-hysterectomy.

So our trouble begins with the grippe, or whatever she had. It was a serious trouble, because they thought of typhoid, so she made a bad impression on the doctors. The woman doubtless was toxic or septic.

That the conclusions reached by our contributors are feasible, goes without saying, and one could dismiss the problem right there and in all probability be right. Nevertheless, we have not enough to hook the diagnosis on, and here is where Dr. Holcomb should have given us more data, without thereby weakening the study from the seminaristic point of view. When there is not enough for a decision, we can come to no decision at all, except to weigh probabilities, and that has been done.

I call on Dr. Holcomb to help us out. Was there ataxia? Was there disturbance of vision? Were the pupils irregular? What was the pupillary reflex on each side? Was Kernig's sign present or absent?

When I get answers to the above questions, then only shall I be able to arrive at anything like a reasonable diagnosis and give satisfactory reasons for my conclusions.

Meanwhile, I congratulate and thank the contributors for the presentations.

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Surgical Problem No. 5

Presented by Brigadier General Geo. Acheson, Canadian Army, St. Martins, N. B. Canada

Recently, I was called, early in the morning, to see a man, aged 62, of spare build, owner of a country general store. He had worked in his store the entire day preceding my visit, and when he retired for the night he felt as well as usual.

Sometime during the night, he awoke with a throbbing feeling up the back of the neck, with sensation extended to the right temple and ear. The ear seemed to be full and pounding. He was restless and went to get an aspirin tablet. He returned to bed and slept until six when he awoke with nausea and profuse hematemesis, over a pint of dark-colored blood, partly fluid and partly clotted, having been vomited. There was no pain and after the hemorrhage the above described sensation virtually disappeared.

When I first saw him, he did not make the impression of a very sick man and, indeed, he was quite cheerful. Inquiry shows that he has always enjoyed good health, except six years ago when he had the "flu". Close questioning did not reveal any history of previous trouble ascribable to the stomach, except an occasional stab of pain, with no relation to food intake. His bowels have always been regular, his appetite good, as was his digestion. Two weeks ago he had a similar attack of throbbing up the back of the neck and tinnitus in both ears, which passed off entirely.

Physical examination of the abdomen revealed nothing abnormal. Pulse 80, somewhat hard, vessel wall slightly thickened and wiry, systolic blood pressure is 150 and the diastolic pressure is 60. Temperature was normal. The routine examination showed nothing abnormal. It should be added that shortly after the patient vomited he had also a small bowel movement which contained altered blood.

The therapy instituted for the first twenty-four hours consisted of ice water and five minims of pituitrin by mouth every four hours. After that time there was no nausea or vomiting and the patient was given two ounces of milk diluted with an equal quantity of lime water, every two hours, and half an ounce of olive-oil, every four hours preceding the administration of the milk. This treatment was well borne and, with the exception of two tarry stools and tinnitus, there was no pain or symptom of any kind.

Four days later the systolic blood pressure was 165, the diastolic 90. The pulse was 72, tinnitus in the right ear continued. There was no further hemorrhage. Other symptoms unchanged.

Required: Diagnosis. Medical treatment and surgical treatment (if any).

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Surgical Problem No. 6

Presented by Lt. Col. Charles B. Reitz, M. R. C., U. S. Army, Palmerton, Pa.

About a year ago, in February, I became aware of a distressing sensation under the sternum, extending vertically for a length of about three inches. This sensation reached the maximum of discomfort in about three days, remaining so for a month. This sensation may be described as being as if I had swallowed an excessively large food bolus.

There was, however, no relation to swallowing; food seemed to relieve and liquids did not modify the sensation. There seemed

to be no other trouble in the stomach. I never coughed nor did the x-ray reveal anything abnormal.

My appetite failed and insomnia was added to the situation. When I did fall asleep, I was often awakened with the sense of discomfort described, from which I found some relief by assuming the sitting posture. Every conceivable laboratory test was made with the sole finding of a polynuclear leucocytosis and a secondary anemia. The condition suddenly left me after a twenty-four-hour crisis.

I was left weak, anemic and with a poor appetite for about two weeks, when the skin began to show numerous superficial but very painful boils, especially on the lower extremities and in the pubic region. Six weeks later similar boils appeared also on the forearms. The earlier boils were streptococcic and formed pus in one day, those which appeared later, on the upper extremity, were also streptococcic but, instead of pus, showed sloughing and were complicated by lymphangitis and adenitis.

Ten weeks' treatment with mixed vaccines finally brought about a cure.

It required nearly a year to overcome the intense debility which followed and, except for the scarring left by the abscesses, I am now in good health.

Required: The diagnosis of my condition as described.

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Clinical Case No. 1
Contributed by Dr. Isaac E. Crack, Hamilton, Ont., Canada

I was called February 19th last, at 1:30 p. m., to see a man, 25 years of age, who had been suffering for five hours from abdominal pain and vomiting. He had taken salts but vomited immediately afterwards. An enema produced no relief. Temperature 98° F. pulse 78. Deep palpation of the abdomen reveals tenderness over the appendix. There was no muscular rigidity.

I diagnosed catarrhal appendicitis and told the patient he would, in all probability, not require an operation.

The treatment advised was rest and strict abstinence from food and drink.

At three in the afternoon, the patient was no better and expressed a desire to undergo operation.

Objectively I found no change in the situation. The patient stated that he felt only some "aching" and a sense of fullness in the abdomen.

The patient walked to my car, to all appearances a well man. The blood count, taken shortly after his arrival at the hospital, showed 6400 leucocytes.

Operation performed at 5:30 p. m., the same day revealed an appendix four and one-half inches long, distended with pus throughout the entire length. There was no doubt left to me, and all present, that the appendix would have ruptured in a short time. The finding was a complete surprise to me.

[The above goes to show what a treacherous affair appendicitis is. I myself have seen at least four such "disappointments". On the other hand, I have opened the abdomen in the expectation of finding pronounced pathology, only to encounter a shriveled, mildly inflamed appendix, with no pathology elsewhere in the abdomen, to account for the stormy symptoms. To cap the diagnosis, the therapeutic results left nothing to be desired. But the thing all surgeons dread is that foudroyant form where the toxins are overwhelming and where even an hour is sufficient to produce a virulent peritonitis, against which abdominal section and drainage and heroic after-treatment amount to a hypodermic syringe filled with water squirted against a burning house. We thank Dr. Crack for this report and invite others to "come across".—ED. SEMINAR.]

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Clinical Case No. 2
Contributed by Dr. A. H. Vorwerk, Burlington, Iowa

Dr. Holcomb's case, which I do not intend to discuss as far as the diagnosis is concerned, reminds me of an experience, which I submit for the consideration of the readers of the Seminar. I have reference to disturbed menstrual function, which Dr. H. did not discuss in his problem.

Miss N. N., aged 25, has for several years past, suffered from attacks of extreme headache, nausea, rise of temperature to 103° F., vomiting and, very frequently, general aching of the body which was rather severe. Even when the temperature was normal or slightly subnormal, the intense headache and nausea persisted.

She had been treated on the assumption that she suffered from intestinal autointoxication, treatment of which consisted, among other things, of rectal dilatation to stimulate evacuation of the pelvic colon.

Some time ago, I decided that the patient was suffering from endocrine dysfunction. At the beginning of a typical attack, I administered 1 mil ampule of corpus luteum, hypodermatically. The result was so encouraging that I put the patient on one

quarter of one grain of thyroid extract and four grains of ovarian substance per os, four times daily for one month.

The result of this treatment has been gratifying. The attacks have not recurred and the flow is now normal as compared with the excessive flow lasting one week prior to endocrine therapy.

[I have shortened somewhat the above contribution because Dr. Vorwerk merely desired to bring out the phase of endocrine dysfunction in menstrual disturbances. That there is great value, in selected cases, in treating certain disturbances endocrinologically, can no longer be doubted. The results are not always so striking as that reported by Dr. Vorwerk. It must not be forgotten that much depends on a correct diagnosis. To cite an example: I was called in consultation last winter to see a case similar in character to the one described above. Every treatment had failed including ergot, intrauterine galvanism, animal extracts and what not.

The girl was about 24 years old and a *virgo intacta*. After a thorough examination, I felt irregular enlargement of the uterus. I did an abdominal section and removed a number of myomata varying in size from a pea to a hazelnut. The menstrual trouble and certain nervous phenomena disappeared. A rational diagnosis leads to rational therapy, therefore—*primum* diagnosis.—ED. SEMINAR.]

Public Health Aphorisms

By MATTHIAS NICOLL, Jr., M.D., State Commissioner of Health, New York

[The conclusion of the DeLamar lecture before the School of Hygiene, Johns Hopkins University, January 28, 1924; reprinted from the New York State Department of Health Quarterly, April, 1924.]

Choose a public health career for two reasons only—because it attracts you and because you believe yourself fitted for it.

You have broad technical knowledge. Give others the benefit of it, but only as occasion requires and not for personal glorification.

Official representatives of the people; The people themselves may not understand public health work, but frequently possess other knowledge which may be of service to you.

Maintain your dignity at all times, but do not stand aloof from human contact.

If you feel superior to those about you, don't show it. Perhaps it is only imagination.

Make many friends, but few intimates.

Be a good listener, but not a too ready talker.

Practice public speaking. Eloquence is a rare gift, but is essential to the command of respectful attention.

Be loyal to your associates and true to yourself.

Never permit political sympathy to influence an official act.

Be not oversuspicious of evil intent. Give everyone the benefit of a doubt.

Be willing to grant favors to all those that seek them worthily, provided that it is not incompatible with the performance of your sworn duty.

Have vision, but be not visionary.

Lead the procession always, but look behind once in a while to see if you are being followed.

If you can not obtain all your objectives, take what you can get and try again.

Know when you are beaten, and take your defeat gracefuly.

Be willing to compromise in order to reach an objective, but never with your conscience.

Frankly acknowledge a mistake, but do not make it a second time.—*Reprinted from New York State Journal of Medicine*, Nov. 1924.

Clinical Notes and Practical Suggestions

CHOICE OF HEMORRHOIDAL OPERATION

There is nothing in the whole realm of surgery that affords our patients such prompt, postive and complete relief as a well performed removal of his hemorrhoids. It is one of our most satisfactory surgical procedures.

Once the tumor has formed, subsequent inflammation will produce a hyperplasia of the connective tissue about the veins, and then there is no possibility of the tumor being absorbed, but it must be removed surgically. There are some cases of hemorrhoids in which it would be better to operate under general anesthesia when other surgical conditions need attention, but most hemorrhoids may be satisfactorily removed operatively under local anesthesia, thus entailing but a few days detention from business, while also eliminating the danger to life from heart, lung, or kidney complications, involved in a general anesthesia, as well as lessening the pain and the danger of secondary hemorrhage brought on by postoperative vomiting. A local anesthetic possesses a distinct advantage in the case of aged, timid or nervous patients.

The reason that you treat so few rectal cases is not that they are infrequent, but rather that your patients do not like to have an operation, and particularly to take a general anesthetic and to be confined to bed. Patients suffering with piles are prone to use domestic remedies and nostrums until they are physical wrecks from loss of blood and pain, in the meantime always refusing an operation. With our present knowledge, it is not always necessary, or wise, to give a patient a general anesthetic and keep him in bed or in a hospital irrespective of the variety or condition of the piles. Practically all uncomplicated cases, and they are numerous, may be operated upon with local anesthesia.

All operative procedures for the relief of internal hemorrhoids are modifications of one of the following types of operation:

1. The ligature.
2. The clamp and cautery.
3. Excision, with or without ligature.

There are almost as many modifications of each of these methods as there are operators.

In selecting any operation the following considerations must be taken into account:

1. Safety.
2. The removal of all pathology.
3. Preservation or restoration of function.
4. Minimum traumatization.
5. Prevention of hemorrhage.
6. Preservation of sphincteric continence.
7. Insurance against recurrence.
8. Freedom from infection.
9. Prevention of pain during convalescence.
10. Minimum hospital confinement and detention from ordinary occupation.

There are many minor considerations, but these represent the principal factors which should be taken into account. Every proctologist has his own definite idea on the subject and the results following any operation in the hands of any surgeon will vary according to the individual skill of the operator in performing that type of operation employed by him.

The ligature class of operations is probably, with its modifications, the one most frequently employed. Some operators ligate before cutting, while others ligate vessels only when they spurt. Some surgeons ligate the tissues above or beneath the individual hemorrhoids while others carefully isolate the vessels and place a ligature around each. There is much to be said for and against each method of applying a ligature.

The arguments against its use are the danger of infection, the possibility of a ligature slipping, as well as of slough and the fact that more tissue than is necessary is included in the ligature and unnecessary pain, edema and swelling induced.

For the clamp and cautery, it is argued that it is applicable to all types of internal hemorrhoids, that it can be performed quickly, that the pathology is removed with-

out the necessity of suturing and that the danger from hemorrhage is reduced to a minimum. Against this operation is the fact that the clamp can not be placed deep enough to remove all of the diseased vessels, or, if it were possible to do so, much healthy mucosa is needlessly sacrificed. On account of the amount of mucosa removed, contraction is apt to result. A scar resulting from a burn in a circular cavity lined with mucous membrane means a lessening of caliber.

One objection to the use of clamp and cautery operations, in the minds of many surgeons, is the fact that it is not a suitable operation to be performed under local anesthesia, and the odor of burning flesh is certainly not very soothing to the patient whose flesh is being burned. It is a well-known fact that there is more scar and contraction after a burn than any other form of trauma.

Some operators make a longitudinal or eliptical incision into the mucous membrane over a hemorrhoid and carefully excise all diseased tissues.

The advantages of excision are the removal of all of the pathology without any unnecessary sacrifice of mucous membrane and the ability to close a wound, either with or without suture, with the least amount of scar formation. Like a ligature operation excision can be performed under local as well as under spinal and general anesthesia. The arguments against excision are practically the same as those against the use of the ligature.

CHAS. J. DRUECK,

Chicago, Ill.

HEALTH CONDITIONS IN 1924

The Statistical Bulletin, of the Metropolitan Life Insurance Co., is authority for the statement that the health of the people of the United States and Canada was probably better in 1924 than ever before.

There were no wide-spread epidemics during the past year, and the influenza deathrate was one of the lowest ever recorded. The rate for all epidemic diseases of childhood declined, but this was most marked in the case of diphtheria, which was only 12.8 per 100,000 (a drop of 50 percent from the rate of 10 years ago).

This decrease in the diphtheria deathrate should be credited largely to the increasing use of the Schick test and active immunization with toxin-antitoxin, as well as to the increasing realization of the importance of the early use of antitoxin in cases of diphtheria.

New minimum deathrates were recorded for typhoid and tuberculosis, and the pneumonia rate was markedly reduced.

A slight decrease in the rate for cancer was noted, as compared with 1922 and 1923, and slight declines were seen in the rates for diabetes, "degenerative diseases," and conditions incident to maternity.

There was a very slight decrease in the rate for fatal accidents in general, but an increase in deaths due to automobiles.

TREATMENT OF VALVULAR HEART DISEASE

(Abstract of a lecture delivered before the Chicago Medical Society by Robt. B. Preble, M.D., Professor of Medicine, Northwestern University Medical School.)

Valvular lesions, with the exception of two to be refered to later, result only from one thing: bacterial implanation. When one has to deal with an acute endocarditis in which the infection is still active, the thing which you would like to do would be to kill the bacteria as rapidly as possible. Unfortunately, there is no way of so doing. Many methods have been devised in the hope of destroying bacteria in these cases but all to no purpose. No doubt, in time, some one will discover a method of destroying the bacteria, which will not be so harmful as to injure the host, and whatever this method will be, the chances are it will be chemical and not biological.

In a patient with acute endocarditis, the great thing is to keep him at rest; not for a week; not for a month but for many months,—oftentimes six months to a year. By rest is meant *rest in bed* in order to give the diseased valves a chance to heal. The place where this method of treatment is particularly advisable is in the child with rheumatism.

Rheumatism in childhood is not so important so far as the joint manifestations are concerned, and not so important so far as the constitutional reactions are concerned, but it is of tremendous importance when you consider what a large percentage of children who have acute articular rheumatism develop acute endocarditis. The only safe rule to follow with children who have articular rheumatism is to consider every one of them as having an acute endocardial complication. Ninety percent of them have it and if they are kept in bed for weeks

and months many of them will heal and the endocarditis will cause so little disturbance that you will never be able to convince any one, in later life, that the child had an endocarditis.

Another thing, any individual who has had acute endocarditis once is liable to have it again. At times one may not recognize that there is an infection of the endocardium, because the febrile disturbances are so mild that an elevation of temperature will not be detected unless systematically watched for. When a patient is suspected of having a low-grade endocarditis, it is well to take the temperature, per rectum, every two hours, for two or three days. If no elevation is found, take it again for two or three days and sooner or later you will find a low-grade temperature and a low-grade leucocytosis.

In administering the rest cure, if you are in doubt as to whether the child, or the adult, has been at rest long enough, keep him at rest for another period of weeks. (Dr. Preble cited a patient, still under observation, who had an aortic lesion when he was 12 years old. For 59 years he has carried that heart lesion, leading an active life, and all that time without a break in compensation.)

After the infection has subsided and the valve has healed, what care should be taken of the individual? Each one of these patients is an individual problem. He should be gradually allowed to do more and more work; as much as he can, and not as much as the doctor thinks he should do. It is surprising how much these patients can do.

When you have to deal with a child who has a heart lesion, that child's whole life should be arranged so that his heart lesion will handicap him as little as possible. In the matter of education he should be trained to some of the lighter occupations or professions. There is a constant stream of girls and men coming to the dispensaries with heart lesions who have not gone beyond the sixth grade in school and therefore are not in position to earn a livelihood at some of the lighter occupations.

Individuals with heart lesions of this character should be watched all the time because by so doing you can increase their activity; you can increase their working capacity; and, what is equally important, you can increase their activity far beyond the point which they could reach if left to themselves They do not need medicine; they do not need digitalis There are too many men practicing medicine who think that the presence of a heart lesion is a reason for prescribing digitalis. That is not so. Thousands of men who listen to the heart with a stethoscope and hear a murmur immediately write a prescription for digitalis. The great bulk of these people do not need any medicine.

In persons with broken compensation there are three things of importance. The first is absolute rest and plenty of sleep. They must have sleep, even though a narcotic has to be employed to produce it. Second, the use of digitalis, and third, bleeding.

One other lesion which should not be overlooked is aortic insufficiency without other valvular defects. Most of these patients are 35 to 50 years of age and they come in complaining of shortness of breath, a sense of constriction in the chest and often with pain radiating into the arms. On examination, they have a cleancut aortic insufficiency. Those cases are practically always syphilitic and should *never* be treated with arsenic, neosalvarsan or the other arsenic preparations. Small doses of iodides, over long periods of time, give the best results. This is the one place in the body where you do not want to get rid of a syphilitic process quickly. You want to get rid of it so slowly that there is left behind as much scar tissue as possible. If you get rid of it too quickly, then you leave a weakened aortic valve which begins to stretch.

SIZE OF FAMILIES

Some interesting results obtained by the Department of Commerce in their study of the size of families are set forth in a recent bulletin.

For families which are presumably completed (that is, where the father is from 40 to 49 years old), the average total number is about 6, and the average number of living children is about 5.

The highest average size of families is found among coal-mine operatives, and among foremen and overseers; the lowest among architects, actors, dentists and physicians.

[This statement brings graphically to mind the warning which is being sounded by biologists and students of eugenics, that our highest and best familial stocks are in danger of dying out, while the less desirable strains seem to be increasing. What can we do about it?—ED.]

NOTES ON BACTERINS

I am not a believer in the opening of boils, abscesses and carbuncles in the incipient stage. They may be cured, stopped, aborted, and die a natural death in favorable subjects, without a knife, sometimes without much attention locally.

Van Cott's mixture of stock bacterins may stop quinsy, prevent pus formations, hives, beginning infections, and relieve the pain of erysipelas and stop its progress at once. There is no end to the troubles, from head to foot, which this mixture may help. Eczema, peritonitis, appendicitis, cystitis, and tonsillitis are frequently relieved, and it should be used along with every dose of antidiphtheritic serum or of respiratory vaccine. Removal of the tonsils is proper, in selected cases, but what are you to do about the endo- and pericarditis following tonsillitis and tonsillectomy, as well as the arthritis present before the removal of the tonsils, or after their removal, caused by nasal or bronchial infections? Thousands of tonsils may be made to go down to normal size, sometimes with a very few doses of stock vaccines. Whooping-cough vaccine, "mixed," works in many cases of severe cough, asthma, etc., in children up to 83 years. Some say the vaccines do not cure, but many have relief for months and years; and I don't know of many farmers who have next July's weeds killed off yet; most of them will be content to stop them when they begin to grow, and we can keep down disease weeds, sometimes, for many years. Let's be glad that we can give relief in some cases if not all.

Bacterin Don'ts

In acute infections with fever, don't fail to give enough.

Don't wait.

Don't repeat soon after hard reactions.

Don't give to a patient who is improving.

Don't expect results from bacterins alone when the surgeon ahead of you has removed the ovaries; add ovarian substance.

When the pituitary gland is defective early in life, add pituitary substance.

When lime is wanting it should be injected, and parathyroid and lime supplied by mouth.

When a large goiter is present, give bacterins, iodine and thyroid.

When asthma is present, you know the adrenals are not working.

Supply each gland what it needs.

Don't wait for nature to fail, but assist and stimulate at once.

Don't expect results in the very chronic cases If these cases could have produced antibodies, they would have recovered in the first place.

Do not try to stop ordinary pain with dope; use bacterins, lactigen, and endocrines —the three graces.

"Shoot" the babies, for good futures.

R. W. CHIVERS.

Jackson, Mich.

OBSTETRICAL CASES IN RURAL PRACTICE

Dr. Eneas K. Mackenzie contributes interesting suggestions on the above subject to the Section of Obstetrics and Gynecology of the *Brit. Med. Jour.* of August 16, 1924, as follows:

"When engaged for a confinement I make an early visit to my patient, and have a talk with her. I go fully into her past health history, and make a thorough physical examination of heart, lungs and breasts, carefully examine her abdomen and make inquiries as to her past menstrual history and her freedom, or otherwise, from vaginal discharge. If I have previously delivered her, much time is saved, as I have full notes, and my only duty will be to remind her of points previously explained, emphasizing any important factor to which her past history compelled attention. At this interview I calculate the probable date of confinement, arrange about a nurse, and draw the patient's especial attention to dress, diet, exercise, baths, regulation of bowels, morning sickness, preparation of nipples, and such symptoms of pathological significance as pain in abdomen, hemorrhage from vagina, sudden pallor, swelling of lower eyelids, etc. I instruct her about the importance of supplying me regularly with samples of urine, and conclude my visit by leaving with her a printed pamphlet explaining the points discussed, and detailing shortly what she ought to do should any of the mentioned pathological symptoms arise.

"I again see my patient about the fifth month, when I confirm, or otherwise, my previous estimate of the probable length of her pregnancy, make careful external pelvimetric measurements, the mere doing of which gives me a good idea of the capacity and form of her pelvis, again examine her heart, insist upon the importance of frequent examinations of the

urine, and conclude by an examination of the abdomen, generally confirming or correcting the impressions as to prognosis formed at my first visit. At this visit I go into details about the preparations for the confinement, and see the actual bed. These preparations I detail in Part 2 of the pamphlet which I leave with her, and I shall discuss them later.

"Unless my findings, or her summons as the results of some pathological state developing, compel an earlier attendance, I pay my final antenatal visit, as nearly as possible, a week before the expected confinement. At this visit I again completely examine heart, abdomen, and pelvis, and satisfy myself as to the actual relation of fetal to maternal parts. This enables me to undertake any measures that my examination may have rendered necessary for facilitating delivery, and I am usually able to visualize the course of the confinement, and so know and anticipate, when called to her bedside, what my actual difficulties, if any, are likely to be. I again go over details of the preparations for the actual confinement.

"It is difficult to put in words what all this has meant to me, such details in general practice being incomplete in many respects, but I can truly say that my whole mental attitude towards my confinements has been changed. I can now face them without any misgiving as to what is before me, and I have been rewarded by uninterrupted good fortune. Guidance in heart, renal, and even dyspeptic cases has not only made all the difference to the prospective mother, but has warned off dangers to her and her child, and our combined knowledge and confidence in one another has removed difficulties at one time ever present with me. Since 1915 I have conducted 680 confinements, of which 224 were primiparae, and I have had only 11 stillborn children. I have had no maternal deaths, and no puerperal fever. In that series there were 3 monsters, 2 cases of spina bifida, 3 cases of eclampsia, and 4 cases of antenatal albuminuria, not terminating in eclampsia. In 13 cases labour was premature, and in 14 cases I had to remove the placenta manually. In 212 cases forceps were used, and in 151 cases I had to repair the perineum. This latter I do in every case of ruptured perineum, however small it may be. The series further included 18 breech cases, and 4 shoulder presentations.

"My preparations for an actual confinement are based upon my belief that a clean patient, clean outside with a cleaned-out bowel and an empty bladder, with clean bedclothes covering a clean bed in a clean room, with an efficient nurse in attendance, undergoes little danger of contracting the infection of puerperal fever, provided the doctor has a clean forehand conception of his procedure, and carries out his ideas with reasonable skill.

"The patient, however poor, can provide clean clothes for her bed and her body, can have her body clean, including the removal of vulval hair. Her nightdress is tucked up under her armpits, and she wears a clean petticoat slit down the back. The bed is supported by boards, previously gotten ready, slipped under the mattress or spring, and the mattress is covered with thick brown paper or waterproof sheeting, and a broad draw-sheet is placed under the mother. Lysol, one pound roll of cotton-wool, and two deep basins, one often borrowed from a neighbor, with abundance of hot and cold water, complete the arrangements.

"All this seems simple, but, as my instructions carried out in every detail are vital to success, they have to be fully explained before the confinement, and I leave with patient and nurse a pamphlet fully detailing my requirements, so that when I arrive for the actual confinement it is my custom to find all in order. In the early days of my practice I met difficulties and ignorant opposition, especially at the hands of the old-fashioned 'howdie' or handywoman, and upon one occasion had to take the serious step of leaving a patient in actual labour because my instructions had been ignored. The fact that I had taken this drastic step soon spread abroad, and I have had no trouble since.

"In all cases, when labour starts I insist upon a dose of castor oil followed by a large enema, the latter repeated as necessity demands. I also require the bladder to be frequently emptied."

GERM KILLING EFFECT OF ULTRAVIOLET MEASURED

A study of the germ killing action of ultraviolet rays has been made by the Bureau of Standards, Department of Commerce, covering the range of wave lengths from just beyond the limit of the visible spectrum down to the shortest wave lengths

emitted by a mercury vapor arc in a quartz lamp.

Bacterium Coli Communis was the victim of the tests. This germ is always found in human sewage or in waters that are polluted and likely at some time to contain typhoid.

Rays of sufficient intensity, it was found, could kill bacteria with an exposure of less than one second duration.

When the intensity was very low, the killing action was greatly retarded. On still lower intensities there were some indications that the bacteria were stimulated instead of being killed.

It was found that the killing effect was proportional to the total exposure, whether this was given all at once or was divided into several short exposures with periods of rest between.

SENILE HEART

[Abstract of a lecture by Dr. W. G. Alexander, delivered at The Evanston Hospital, Evanston, Ill.]

Senile heart is of two varieties: toxemic (the socalled "rheumatic heart"), in which there is pathological fibrous tissue in the heart *valves;* and arteriosclerotic, in which there is pathological fibrous tissue in the heart *wall* and in the walls of the blood vessels.

Both varieties have certain symptoms in common. There will be:

Dyspnea. Tachycardia.
Cardiac palpitation and irregularity.
Fibrillation. Hemorrhoids.

There are, also, certain principles of treatment which apply to both classes of cases, and this treatment should be directed to building up the cardiac *reserve* power.

Abundance of rest and *sleep* are *absolutely essential.*

Digitalis (preferably some potent and standarized preparation which can be administered subcutaneously) should be given *to effect.*

Be careful not to *undertreat* these patients.

CHLORINE GAS IN RESPIRATORY DISEASES

"Dr. Frank J. Monaghan, the Commissioner of Health of New York City, upon the publication of a paper by Vedder and Sawyer, of the Army Medical Corps, on 'Chlorine as a Therapeutic Agent in Certain Respiratory Diseases,' in the *Journal A.M.A.* for March 8, 1924, recognized at once that, if their observations were substantiated by others, chlorine gas could be made to serve as a valuable means for preventing the annual toll of deaths due to acute respiratory diseases.

"Commissioner Monaghan took steps to establish two clinics for the purpose of investigating the merits of these claims, so that this and other communities might profit by the use of this gas, if it was found to be as valuable as had been asserted.

"Care was taken to exclude from this treatment cases of hayfever and tuberculosis. Our experience in treating thirteen individuals who had asthma gave us cause for alarm in at least two instances, and led us to the conclusion that it was dangerous and that it would be, therefore, unwise to admit other cases. Similar reasons determined our exclusion of cases of pulmonary tuberculosis.

"Shortly after our experimental work was begun, we instituted a follow-up method in order to ascertain from each of the patients who had been treated whether they had been cured or in any way benefited, so that we might be able to make as accurate an appraisal as possible of the merits of the treatment. As the result of intensive follow-up work, we received 506 letters from the 671 patients who suffered from respiratory disease and whom we had treated with chlorine gas. We also received 35 reports from persons suffering from asthma, hayfever, sinusitis and deafness, respectively. There were also 18 cases of whooping cough that were treated under our auspices. The total number reported upon is 559 cases.

"It is contended by some that the public is demanding chlorine treatment and this argument is urged as an excuse for buying apparatus with which to give the treatment. We have found no such popular demand; nor do we believe that a mere demand of the people should lead us to give a treatment for which, as yet, there has been no scientific warrant. Vedder and Sawyer claimed most excellent results, notwithstanding the fact that most of their patients had but a single treatment. In our service a very decided majority had received two or more treatments on successive days. Whereas Vedder and Sawyer reported 71.4 percent of their 931 patients cured, we found only 6.5 percent of our 506 patients cured. We cannot attach very much importance to the 53 percent of cases that reported improvement.

Those who have had much experience in the treatment of respiratory infections are well aware that in the majority of instances, when cases do not develop serious manifestations, they tend to improve of their own accord, no matter what method of treatment is employed. Any method of treatment which is claimed to be especially effective must be shown to exercise a prompt and decisive influence upon the symptoms of a large number of cases of acute respiratory disease. One cannot demand quite as much in chronic cases. If the studies of other observers should bring forth results that approximate the percentage of cures claimed by Vedder and Sawyer, the latter will richly deserve applause and commendation, nor will we be tardy in acclaiming their achievement. So far as we have gone, we regret that we have not been able to confirm the results reported by Vedder and Sawyer. On the contrary, we deem their claims to be unjustified and deprecate the large and unwarranted claims which have appeared in some places and which have been inspired by those interested in the sale of devices for administering this treatment.

"Eighteen cases of whooping cough under care at the Riverside Hospital of the Department of Health were studied together with twelve control cases, to note the response of the former group to this treatment. Twenty treatments of one-hour duration each were given at daily intervals to these eighteen cases. There was no appreciable difference noted after the first five treatments. Thereafter, the frequency of the paroxysms abated slowly from an average of twenty-five per day per case to an average of twelve a day at the end of the twenty treatments. However, the frequency and force of the paroxysms diminished in practically equal measure among the twelve control cases that were under observation. On the basis of a larger experience than that on which Vedder and Sawyer made their claims, we must conclude that the treatment was entirely without effect in whooping cough."

"(A more extended article dealing with this study was published in the Department of Health's Monthly Bulletin for October, 1924, a copy of which will be sent to anyone requesting it.)"—*Weekly Bulletin of Department of Health of New York City*, Nov. 29, 1924.

[In view of the success attained by the use of Dakin's solution in surgical cases, and the results reported by Vedder and Sawyer, there can be little doubt that chlorine, in some form, has a distinct value in acute respiratory infections. In confirmation of this idea, numerous physicians have reported gratifying response from the use of solutions of chlorazene in this class of cases; and this treatment seems to be worthy of a thorough trial, with a careful study and reporting of results obtained. —ED.]

OBSTETRICAL PROBLEM NO. 1

Speaking of the management of pregnant women suffering with heart disease, Mackenzie says: "The greatest occasion for anxiety is in mitral stenosis." Our duty is clear, namely, to shorten the woman's labor as much as possible. If the pulse pressure is found to be below normal, the prognosis is unfavorable; if normal, good.

If the woman is in a hospital, a delivery by cesarean section under gas-oxygen carries the smallest risk.

If she must be delivered in her home, disregarding the welfare of the baby, under a full dose of H-M-C let the os be dilated; then, under ether-narcosis, delivery by forceps or version. If during this work her condition becomes bad, the intravenous use of caffeine-soda-benzoate may pull her through.

G. K. SHUMAKER.

Bellevue, Ohio.

THE TREATMENT OF LEPROSY IN KOREA

The treatment of leprosy now used by us and others is giving very satisfactory results. Many of the patients treated in our hospitals at Kwangju and Fusan are being restored to health and sent home. Whether permanent cures will result in these cases, we do not yet know. At Kwangju, since we have adopted the present method of treatment, we were able on May 1 to parole 75 cases, and 40 cases have been paroled at Fusan, at which place I am directing the treatment.

At the Fusan institution the ethyl ester of chaulmoogra oil has been in use. Injections are made weekly, in doses of from 1 to 4 Cc. The patients have complained considerably of pain and other symptoms, but Reverend Mackenzie has insisted on their sticking to this form of treatment, and in

these cases it has been adhered to. At Kwangju I put one-third of our cases on the ester treatment, but while I was on furlough they all quit it for the plain oil in camphor. Again, I put forty special cases, who were very keen for the treatment, on the ester, and they too gave it up after some time, only one man persisting in the treatment.

In eighty cases which were placed on the ester treatment before I left on furlough, the treatment was carried out on an average for 6.4 months but was discontinued in all of them. The principal causes for complaint were as follows: in 9 cases, loss of weight, sweating and dry skin; in 9 cases, disturbance of vision; in 16 cases, loss of strength; in 7 cases, increased anesthesia; in 12, impairment of general condition; in 11, no improvement. Of course, these were the complaints cited by the lepers themselves and should not be given as my results, for I feel that the ester treatment is of great value.

However, we now use only the chaulmoogra oil, beginning with doses of 3 Cc. and working up to 7 or 8 Cc. per injection. These are given weekly. We simply boil the oil as found in the Japanese market and add 1 percent camphor. The injections are made subcutaneously into the buttocks, although the women prefer the back or subscapular region. Abscesses rarely occur, in spite of the fact that the injections are made by the lepers themselves.

After many of our cases have received the injections for a year or longer they are then able to take the oil by mouth, in large doses, with good results. A good many of the workmen prefer it by this route. In some cases it is so nauseating that it cannot be continued, although, if it is given early in the morning, on an empty stomach, a large dose may be taken. At least a dram a day should be taken by mouth.

Many lepers come in with infected ankles, joints and open lesions. The first thing to be done is to clean up these foci. If a wrist or ankle or metatarsal joint has an old, chronic discharging sinus, about the only thing to be done is to amputate this and clear the system of this focus. Amputation is necessary in some of the great perforating ulcers of the foot. Many of these cases begin to improve immediately after such amputation, and naturally it greatly relieves the suffering.

Hygienic measures are an important factor in treatment. Contrary to the condition in tuberculosis, exercise is most beneficial in this treatment. We insist upon our lepers having some share in the care and work of this home and in gardening. We do not provide the vegetables, and for this reason even those who have had a leg amputated will scratch in the garden to provide their vegetables, and this exercise is most helpful. Many of our patients do hard manual labor, such as cooley work, masonry, carpentry, etc., and I have found that a severe case will show greatest improvement after having been in the carpenter shop, or doing other heavy work, for some months. We have started various lines of industrial work such as building, making of brick and tile, shoes, etc. In addition to the active work, which is of much benefit to them, the patients learn a trade which makes them self-supporting when they leave. All new buildings are now erected by our lepers, and they also produce all buckets, pans, farming shoes, etc.

Bathing is very essential and is required of all patients before treatment is given. Hot shower baths are most satisfactory.

Our dentist, Dr. J. K. Levie, has taught the lepers to scale, extract and care for the teeth generally and this is proving a great boon, as these old, dirty mouths are a source of many infections. It is easy enough to teach them how to extract and scale teeth and I would recommend that every leper colony have this done.

There seems to be an unusual number of eye complications, and their prevention is a problem. Facial paralysis results in ectropion, which exposes the eyes to the wind and dust, with consequent drying and infection. For the dryness, which comes on during sleep, we order lubrication of the eyes with vaseline on retiring, and this is of some assistance. Every leper should be watched for iritis, and treatment begun at once in order to prevent adhesions. Many have adhesions to the lens, and atropine has no effect. I would like some advice from our occulist friends as to treatment for this condition. There is a striking absence of trachoma in our 565 lepers, although trachoma is most prevalent in the ordinary Korean. Why? Many lepers show a thickening of the sclera which is apparently leprous tubercle. These go from bad to worse, many becoming blind. Blocking of the tear-ducts is common, and there is also a great deal of pterygium.

Three years ago we paroled ten cases and only one has returned with the disease. In

May, 1924, we paroled 75 cases, and later 15 others, so that we are most encouraged with results. I see no reason why other leper colonies should not get the same results. In addition to the leper colony, I have charge of a 50-bed hospital, where we care for 12,000 cases a year, so that only part time is given to the leper treatment. We have simply taught the lepers to do their own work, and they have become interested and are doing well in the care of their own colony.

R. M. WILSON.
Southern Presbyterian Mission,
Ellen Lavine Graham Hospital,
Kwangju Leper Home, Korea.

DEFECTIVE EYES IN SCHOOLS AND INDUSTRY

For ages baffling computation, the human race lived out of doors—it is only within a comparatively recent period that man came indoors.

Untold ages were required to develop the human eye—an evolvement suited for outdoor use—and suddenly we demand of it the close application common to the necessities of modern life. Is it strange that most of us have defective eyes and that there is need for conservation of vision?

Most of our eye troubles have their beginning in youth and it is during childhood that eye care should be taught and practiced, especially since uncorrected eye defects increase steadily with age.

From tests of 483,154 school children in 19 cities the reported percentages of total eye defects, corrected and uncorrected, varied all the way from 3.5 percent to 58 percent, and averaged 21.9 percent.

There are on record the findings of very careful examinations of a number of children in the schools of an Eastern city. This study was made by a committee of competent authorities and relative to the findings the chairman of that committee stated:

" There were 88.11 percent of hypermetropic (far-sighted) eyes, which leaves for all other states of refraction at an average age of eight and one-half years, 11.89 percent of which 4.27 percent were nearsighted, leaving only 7.51 percent for normal eyes. A careful analysis of these statistics shows that of these defective eyes, *i. e.*, eyes with errors of refraction, that in upwards of 66 percent of them the defect was high enough to cause trouble, and, therefore, they needed glasses. Theoretically, all of these defective eyes would have been better for glasses, but practically at least 66 percent of them required them for their comfort and safety."

These findings have been extensively quoted, being regarded as authentic and scientifically correct.

It will be noted that while a truly normal eye is rare, there are many slight errors that are not of sufficient degree to cause trouble.

It is an interesting fact that those who have defects of low degree are the ones who invariably suffer from headaches and the various nervous disturbances resulting from eyestrain, because the eye muscles can exert enough effort to overcome the small errors, whereas large errors can not be overcome and frequently do not cause discomfort, but merely poor vision.

A small error in the eyes of a healthy, robust child may produce no ill effect whatever and the need of glasses be very questionable, while the same minor error in an undernourished, weak or nervous child may cause headaches and be detrimental to health if not corrected.

To what extent these small errors should be corrected, unless accompanied by headaches or other symptoms, is a question in the minds of some authorities and this is another reason why it is difficult to state positively what proportion of school children do have errors which should be corrected.

Mothers and teachers, especially, should be vigilant in safeguarding the eyes of infants and children, shielding them from injurious light and against use under improper conditions. It is frequently in the earlier days of life, during the period of development, that eye troubles have their start. Early correction and protection are most important for, if the eyes of youth are cared for, the eyes of maturity and old age will be stronger and brighter and better and coming generations will be free from many discomforts which are now so common.

GUY A. HENRY,
General-Director of the
Eye Sight Conservation
Council.
New York City.

MAN'S MENU OF HOURS

"Recently the *London Daily Herald* published some statistics relative to the way in which the life of an ordinary mortal is divided. Probably the statistician who worked these figures out considered what

he regarded as types but, of course, the 'average man' does not exist as such. Perhaps all of us idle our time in some way, and after all, it is purely a relative matter as to whether time is actually being wasted or conserved. For example, we occasionally see some one sitting with hands folded and apparently wasting time, when he is perhaps working out his own destiny or that of some one near and dear to him.

"The Biblical three score years and ten has been taken and divided up as follows: Twenty-three years are spent in sleep, while sickness claims one and a half and eating three years. For two years and three months the septuagenarian washes, shaves and dresses and, if his scholastic attainments are only average, he spends one and a quarter years in school. Curiously enough, such a man works only eighteen years, and reads almost half as much as he works, namely, seven years. To play is allotted one and three-quarter years and to entertainments, etc., a half year. The time spent in walking and on trains, etc., is set down as two and a quarter years, idling occupies two and one-half years and seven years are given over to sundries, which may mean anything or nothing."—*American Medicine*, Nov. 1924.

DRUG ADDICTS AND THE PHYSICIAN

I happened to come across an article, in the *Current History Magazine* of New York, written a little over a year ago, by Mr. Clyde L. Eddy, vice-president of the American Pharmaceutical Association, which should have been read and heeded by every medical man in the United States—in the world, for that matter—and since I have not seen anything relating to it in any medical literature, I send you this letter, hoping it may be of service to your readers.

Mr. Eddy asserts, with the full authority of his position, "That there are now over one million drug-addicts in the United States."

Nearly one percent of the whole population addicted to the nerve-destroying drugs! In other words, one "drug fiend" to every one hundred persons; and he adds, "I believe that most of the victims became 'addicts' innocently in consequence of having had opium, or its various derivatives, prescribed for them by their own physicians."

A statement of such momentous importance should arouse the interest of every well-meaning physician to the possible consequences of a practice, which may lead to the gradual deterioration of the entire human race.

The World War proved conclusively that the flower of the youth of the warring nations suffered to an alarming extent from one of the most loathsome of diseases, which threatens to undermine the virility of all; added to this comes the discovery of the spreading of drug-addiction in consequence, perhaps, of a too free use of habit-forming drugs. It may easily be foreseen and mathematically ascertained how long it will be before the whole race will be converted into an immense camp of drug-addicts, which will result in the total degeneration of the race and of humanity at large.

The danger-signal has been given. It behooves the medical profession in general to arrest the progress of the oncoming disaster by a more restricted and guarded use of all habit-forming drugs and by urging medical schools to warn their students of the baneful effects following too frequent or prolonged use of all such drugs; and to search for other anodynes which, though slower in action than the opiates in use, yet are serviceably effective, and without the danger of the patient becoming an addict.

It is primarily the duty of the medical profession to stand guard over the public health and to take measures to avert the "signaled danger" ahead; for the public mind, feeling itself secure in the vigilance of the medical profession for its welfare, takes no notice, nor has it the necessary understanding to interpret such signals, and, in consequence, not even a ripple is produced on the placid surface of public opinion.

The same authority makes the significant statement: "More than half of the physicians think that drug-addiction is not a disease. It is classified as 'vice' and treated as such, notwithstanding the unbearable suffering it causes to the patient."

The study of drug-addiction should receive closer attention by the profession and a thorough investigation should be accorded to it.

Opium is a sense as well as a nerve destroyer. As a sense destroyer, it has proved itself a blessing and has played no small part in the progress of surgery, yet as a nerve destroyer it should be guarded against with great vigilance.

The treasury department is authority for the statement: "One repeatedly taking a

narcotic drug over a period of 30 days (in susceptible people, even only ten days) is in grave danger of becoming a drug-addict."

Opium is no respector of persons. Among the million drug-addicts in the United States are preachers and prostitutes; criminals and judges; doctors and patients; artists and lawyers; business men and representatives of all walks of life.

We should remember that a painful illness or operation, or even an automobile accident, resulting in sufficiently painful injuries, might, if wrongly handled, cause any one of us to become one of the million addicts, a few weeks or months hence.

This danger signal should ring in the ear of every progressive physician, that he may save humanity from becoming "Unburied Ghosts," as the clever American poet, Edwin Markham, so aptly described them in his poem, "Slaves of Drugs."

JAS. HEGYESSY.

Alliance, Ohio.

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[We are glad to give space to Doctor Hegyessy's letter, for we do believe that there is a possible source of danger in the indiscriminate use of habit-forming drugs by careless or thoughtless physicians.

In our opinion, however, the picture is painted in rather more vivid colors than the situation seems to warrant. We do not really believe that the percentage of criminally careless physicians is large enough to constitute a national menace such as the doctor suggests, and, after having walked about the streets of many of our largest cities, including New York, Chicago, Philadelphia and Washington, in the last year, watching the people rather closely, we do not believe that one in every hundred of our citizens—no, nor one in every thousand—is addicted to the use of deleterious drugs.—ED.]

PHYSICIAN AND PATIENT

"The following may be stated to be the rules which govern the initiation and termination of the relation of physician and patient.

"1. The physician is under no legal obligation to accept and care for a patient no matter how grievous the necessity of the patient may be.

"2. If the physician accept the patient, only for temporary care, as e.g., where he gives immediate treatment to the sufferer from an accident, he should make it clear that further treatment will have to be given by another physician.

"3. The patient may discharge the physician at any time, and from the moment of the discharge the physician is relieved of all liability for future care or treatment.

"4. The physician and the patient may agree to terminate his employment.

"5. The physician may of his sole election terminate his employment provided timely notice, according to the particular circumstances of the case, be given to the patient to procure another doctor.

"6. When the condition of the patient is such that further medical attention is no longer necessary, the physician may discontinue his services, but should, of course, so advise the patient."

Medical Economics, Dec. 1924.

TWISTED COLONS AND INVERTED COMMAS

A Study in Printer's Ink

BY VOLVULUS

Symptomatology. The symptoms of this painful disease consist principally of attacks of abdominal colic of sudden onset. The syndrome may be encountered daily in any editorial office—Sundays and holidays included.

Etiology. The cause of the disease can be unerringly placed to noxious material carelessly left in manuscripts by heedless authors. Such material is usually found in the following forms:

1. Ill-prepared copy marked "Dictated, but not read". (This noxious material frequently induces emesis.)

2. Sketchy notes used for a spoken address and not rewritten in manuscript form. (Emesis is often projectile in type.)

3. Twenty-page articles containing two pages of information. (Dyspnea and cyanosis.)

4. Crude, abbreviations: Sodabicarb, the Dr., P. S. P. test, R. kidney, L. K., Sec'y., Ass'n., %, etc. (Vertigo and diplopia.)

5. Common names in capitals: Measles, Breakfast, Digitalis. (Opisthotonos and nystagmus.)

6. Profuse underlining, calling for italics, "black caps", and loud speakers. (Aphonia and laryngismus.)

7. Footnotes that should appear in the body of the manuscript. (Perspiration, chills.)

8. Left-hand spelling: Rockafellow Institute, exema, volumn, illio-cecal, posteriorally, etc. (Tracheal edema.)

9. Illustrations not furnished with titles. (Petit mal.)

10. Single-spaced typewriting, which precludes correction of any of the aforenamed errors. (Visceroptosis and grand mal.)

Treatment: The treatment of this grave and painful condition is chiefly prophylactic. There is need for more careful and considerate authorship. Fatal cases of this type of poisoning would occur less frequently if authors would seek and remove noxious materials before releasing their manuscript for public consumption.

In connection with such prophylaxis, a few "Suggestions to Authors" suggest themselves:

a. Send in your top copy; not a smeary carbon.

b. Write on whole sheets, not half-sheets of paper.

c. Write your name on every page.

d. Furnish a title for each illustration, but do not write it across the face of the picture.

e. Make your references clear. Do not quote "Dr. Smith," but quote "Dr. Iota Magnus Smith." In giving references, do not conclude them with a pencilled question mark. Do a little more work on the job.

f. In submitting a manuscript based on a paper read at a meeting, state in footnote where and when the address was given. Thus:

"Read at the Annual Meeting of the Colorado State Medical Society, October 7, 8, 9, 1924."

This footnote should appear at the bottom of the first page of the manuscript.

g. Conclude all manuscript with a brief summary.

h. Do not plan to make the final draft of your paper on the printer's proof. Use the proof only to show printer's errors.

i. Prepare bibliographies and references with care.

Give the author's initials or Christian name as well as his surname. Follow with a colon (:) and then with the name of the book or article.

In the case of a book, give the edition, unless the edition referred to is the first, then give the page referred to. Follow with the place and year of publication, and the name of the publisher.

In the case of an article, follow the title with the name of the journal. If abbreviations are employed, use those approved by the American Medical Association. (See "Suggestions to Medical Authors and A. M. A. Style Book," supplied by the American Medical Association, 535 N. Dearborn St., Chicago, at a cost of twenty-five cents.) Follow the name of the journal with the year of publication, and then with the volume and page number.

Follow the general form given below:

1. Lovett, Robert W.: The treatment of Infantile Paralysis. Second edition, page 78. Philadelphia, 1917. P. Blakisten's Son & Co.

2. Timme, Walter: Lectures on Endocrinology, pp. 48-62. New York, 1924. Paul B. Hoeber, Inc.

3. Favill, John and Charles F. Rannick: A Case of Family Periodic Paralysis, Archives of Neurology and Psychiatry, 1924, vol. 11, p. 674.

4. Joslin, Elliott P.: Diabetic Problems of Today, J. A. M. A., 1924, vol. 83, p. 727.

Reprinted from Colorado Medicine, October, 1924.

THERE are five good principles of action to be adopted: To benefit others without being lavish; to encourage labor without being harsh; to add to your resources without being covetous; to be dignified without being supercilious; and to inspire awe without being austere.—*Confucius.*

The Leisure Hour

Conducted by GEORGE H. CANDLER

Further Up in the Air

"RADIOITIS" is pandemic!

The number of letters received after the appearance of the "Up in the Air" article, convinces me of that fact. Grave and reverend physicians snatched a moment from the time usually devoted to the perusal of last month's *Journal of the A. M. A.* (not A. *P.* A., remember) to ask if they could not somehow improve upon the reception they now enjoy with a "Superhet," and some most irreverend and ordinary "Docs," who probably spend more time reading the sporting section of the Sunday newspaper than they should when beautiful, technical, long and polysyllabic articles await their attention, wrote in with feverish haste to demand the name of the non-croupous loud-speaker I had mentioned. Others—deeming me to be what I am not. i. e., a "radio expert"—propounded questions as to resistance couplings, the comparative value of Litz wire and bus-bar connections, etc.; and one gentle Lady attache of a professional man wrote, just to inquire what percentage of the voltage output from a distant station reached the ear of the receiver. Humiliated beyond words, I had to assure her that I did not know exactly but had a suspicion that it was about the millionth part of a volt in most cases—and, half of *that* often seemed to get lost somewhere along the antenna!

Then came the low-loss fiend, who wanted to be informed what particular condenser had *no* loss and why, "in Heck's name," there should be losses anyway? "Why," he queried, "doesn't a well-behaved current skip properly along an unbroken copper wire conductor to its ultimate destination and where, anyhow, does all the current one puts into a set go to?" Here I felt like a total loss myself and again had to confess that the iniquity of radio energy and contributory currents set up by us as "parties of the second part" was often beyond comprehension—therefore, open for free discussion. The less you know about something, the more learnedly and impressively you can descant thereon—provided, of course, that your audience is equally (or, even more) ignorant. And, what *I* don't know about Radio is well worth knowing. *Et tu, Brute?*

One of the things I don't know is how the literary gentlemen, who write the "absolutely adorable advertisements" for purveyors of many radio sets, manage to escape the fate of Ananias and Sapphira? Surely, the men who cut their literary teeth in the "Patent Medicine ad field" have gone bodily over to this new and more promising territory! And, "My Stars!" how they have perfected themselves! Sane and (ordinarily) safe men, "seized and possessed" of a "Whoopodyne" read certain luring and limpid phrases of theirs detailing the marvels of the new "Hazelnut-and-dine," believe absolutely the statements therein contained that it will get Walla-Walla and Waraboo, South African Republic (when it is broadcasting, and weather, astronomical and tide conditions are favorable), and "straightaway" mail a check and sit up nights thereafter waiting for it to arrive and bring more noises into their peaceful abodes! Moreover, they fall, not *once* as Eve did, but again and again and, yet again, finally ending up with a feeling that, perhaps, London, Honolulu, Havana and Buenos-Aires are in a magnetic field negative entirely to that in which they have to operate. Their old "Whoopodyne" might not have been "the real thing" but that last three-hundred-dollar, nine-tube "Crioline" (nine patents pending) certainly would work, IF only it were being operated somewhere else. Don't the advertisements definitely say "From Dan to Beersheba" any old night? They do! Indeed they do! Moreover, there is no doubt whatever, that *someone* equidistant or thereabouts between those historical points, may hear either or both, "any old night." But, at best, those "old nights" are few and far between, and "Dan" doesn't often hear "Beersheba" or "Beersheba," "Dan"—the eminent literary gentlemen to the contrary notwithstanding! They shed superlatives as a shad sheds eggs, *but*, only a few hatch!

What the intelligent, well-balanced radio-fan (if such there be) must remember, is that competition now is keen. The public is in the buying mood and Salesmanship is today taught as a precise science. It is easy to sell a man what he thinks he wants —the difficulty, ordinarily, is to make him *want* a thing. If he is quite sure he wants Honolulu and Mount Ararat, or Keomaituk, Alaska, promise 'em to him and he will buy. Then, if for some "occult reason" he doesn't hear these interesting places, sell him another set with still another tube, and he'll get something which *may be* the language of the inhabitants of either or all the places named!

I know that this much at least is true, for time and time again, I have tuned in the Banshee wailing the corronach (or whatever it is) around some moated Irish grange, and not infrequently, by arduous work with a couple of regenerative tubes, have heard the lost souls bewailing their fate in Purgatory. Once, I was almost positive that I had HELL itself (the most remote of all broadcasting stations) but, as the rubber insulation didn't burn off the wires, I decided it was only WCCO and WHL "heterodyning." A good pipe-organ and big jazz orchestra, on about the same wave length, can produce weird, distant, foreign-sounding effects which are most intriguing, on any old set. Further, I know certainly that the gentleman at a certain Eastern station, who gives lessons in French and Spanish, is responsible for more loggings of Havana and Mexico City (which, unhappily, are not on that wave-length) then are those stations themselves. I am referring now, of course, to Middle West and Eastern logs.

Always, *what* you get depends first upon where you live, and next, upon the sensitivity and selectivity of your set. Then with everything else favorable, comes in the personal equation. *You* may not be able to tune in stations someone else would get readily. The other fellow again, unfamiliar with the idiosyncrasies of your outfit, might—though, at home, a "mighty tuner"—fail dismally to receive signals you are tired of hearing!

Considering then a really important matter with due seriousness, we come to the conclusion that there are a multitude of indifferent and even poor hook-ups and an infinitely greater number of even more indifferent or quite incompetent operators. Excluding these, and for the time forgetting also that great army of "fans," who are content with "local" wherever they may be, we will consider Radio from the standpoint of the man with a really efficient set, and the ability to handle it effectively. Even here, however, we must recognize two distinct classes. The one demands tone, clarity and dependibility; the other insists upon reaching out to the outposts of audibility and is happy if he can really hear the call letters of the DX stations. To him, their programs are of no moment whatever; indeed, the more advanced members of this class wish that the announcers would merely stay on the job and enunciate AXZ or POP every sixty seconds. So much valuable time and battery juice would be saved that way!

There are sets which *will* bring in stations thousands of miles distant—*somtimes*. There are sets which will bring in any station of sufficient power in the United States or Canada but, there are no sets which will bring in, even most of these stations, with satisfactory volume *and* pleasing tone, at any time you may wish them brought in! Any good five-tube, radio-frequency or Neutrodyne, operated in the Middle West for instance, will, conditions being favorable, bring in some Eastern coast and some Western coast stations, with a few "Canadians;" but, Portland, Vancouver, Moncton and other remote Eastern stations are very rarely heard from, even on the best "Super" —not because they *could* not be heard; not because the sets operating are at fault but, because of their location and certain atmospheric and geological conditions. In Chicago, where of course, distance reception is difficult at best (especially in the North side residential district) all Texas and Oklahoma stations are received with almost unbroken regularity, but few if any operators hear Mobile or, for that matter, Florida. Atlanta and Macon are the "furthest South" for nine people out of ten. Yet, now and again Miami, Florida "walks in" like a smaller home State station—much better than any of the Wisconsin towns reach us. Reception, at best, is still more or less uncertain, and the set which will work almost perfectly in the country may "tumble down" entirely in the city. Again, the carefully adjusted set with measured aerial and matched tubes may fail to acquit itself as it should when taken a hundred miles from its urban home.

What then, is "the ultimate" in a radio-receiving set at this time? I would say one that performs consistently, that can be operated without the aid of a skilled radio-

teer, and possesses the minimum of controls. One that will allow you to listen to local programs without putting cotton in your ears or wondering whether it *is* a pipe organ or Sousa's band and a mouth-organ ensemble; and then, when you want to "travel," will *go out and bring them in!* Not mangled remains, but the "whole works"—speech, orchestra, piccolo solo or sermon with, finally, the announcement. One has to be an enthusiast, indeed, to sit for three or four hours and listen to fricasseed sounds, just that he may enter in his log-book "KFCI Calcutta, E. I., or, perhaps, LFRM Wamputta, R. I., call letters very indistinct." The best operator with the most superb set may now and again get a badly blurred announcement (all announcers are not gifted with human voices, unhappily) but, lots of people "get distance" like that all the time. No wonder they are looking for "something better," and fall an easy prey to the advertising Ananias!

As a cold matter of fact you can't have everything in Radio—at least, not in one set. You may think you can, but you can't! I know whereof I speak. If your soul yearns for *Music* with a capital "M"—overtones and all—you must, perforce, sacrifice great distance. If you want volume—lots of it—expect distortion. "The more amplification the less melody" is an axiom to remember. Two stages of audio frequency to please—three to "get things;" now and again one finds three stages unobjectionable to the sensitive ear, but the rule holds. Of course, good three and even two-tube sets will get distance on ear phones; some of them even yield surprises on the loud-speaker, but no one should seriously consider transcontinental wanderings with less than five tubes. Six, at this time, will give even better, and more consistent results. Probably, a combination of heterodyne and regeneration with an extra stage of audio-frequency available at will, affords the utmost we can expect for some time to come. Such an outfit demands a good power-horn for the best *distance* results. With one stage of audio cut out and a good non-power reproducer it will give almost perfect results when operated upon local stations. That is to say, you will have volume to spare and tone enough to please any but the most fastidious and critical. It is true that, for perfection in the tone and modified volume fields, one must get down either to the less powerful sets or invest in a multi-tube affair equipped with "peanut" tubes. The best of these sets (dry battery operated and requiring no antenna or ground) will afford the family unending pleasure—until Father or someone takes a notion to "travel." Then, within a week its limitations will be discovered and storage batteries, power tubes, and outside aerials will begin to make their appearance. We just must have 'em to globe-trot! And, most of us feel the urge sooner or later.

Just which set to buy is something else again. Even as each man swears his car is the best in its field—they say the Ford owner will fight for his "Lizzie"—so the Radio fan *knows* that the particular outfit he operates "has 'em all skinned a mile." Now they can't *all* have the others skinned, and calm comparison of sets, operated with the same equipment, alone will enable one to reach just conclusions as to their respective value. Even then, when most other things are fairly equal, one must remember that the rating secured *here* might be reversed somewhere else. Moreover, a wonderful performer may be ruined by the insertion of one faulty tube. The tubes salesmen demonstrate with are not the tubes you get—very few sets indeed will operate at their peak till hours have been spent matching tubes. I know men who have bought dozens of tubes to get three good ones. It is a known fact that one prominent Radio-vending concern paid one hundred dollars a piece for the tubes they demonstrate with, and even a higher price than that for tubes sent out on a certain expedition. Therefore, before you condemn your set (provided it is of standard make) examine closely your tubes, antenna and batteries. Cheap A batteries will limit you materially; poor, or half-run down B's will cripple you even more seriously, but a single poor tube, or even a fairly good tube in the wrong socket, will distinctly put you up "Salt Crick"—wherever that undesirable rivulet may be. Once satisfied with your installation, look after it! Test your batteries every night before you "turn in." Keep your "A" fully charged, and discard dry "B's" as soon as they show a decline of one-third the original voltage. Better still, use storage B batteries or, whenever conditions permit and current is available, one of the two or three tried and proven transformers, supplying a never changing B current supply indefinitely. The right apparatus contains no bulbs, is fool-proof and practically indestructible. About once a year you have, however, to feed it a little

distilled water. It deserves *that*.

A great many letters have contained reference to the "Superhet." I can only say that there are super-heterodynes and "sooperhets." The "super" that works is a treasure, indeed. The "sooper" (and there are a lot of "soopers") like the super in a musical comedy is—well, just a super. One might almost say "superfluous." Watch out how you "distribute your beans" in this field. The known Neutrodynes are all good—some more carefully constructed than others, but they all function. The most widely-known of the five-tube, radio-frequency outfits (sometimes called "Radiodyne") has in this writer's hands, and working under decidedly adverse conditions, consistently achieved results which most other and, often more intricate sets, reach only semi-occasionally. Further, it is pleasant to listen to *always*—which means something. Still, it has distinct limitations—not as to distance reception, for it will go as far as anything has gone—but it necessarily lacks that fine selectivity which will enable one to cut out a nearby high-power station and listen to broadcasting a thousand or more miles away on a close wave length. However, the set which may fail entirely to do that five miles from the "big boy" will accomplish the feat with ease if taken fifty miles out in the country. Further, the set which really will cut through powerful local and bring in distance undistorted, is a *rara avis*, and if you have (or ultimately, get) one, hang on to it as you would cling to your life. Still, in trying to acquire such a possession, beware! If you read all the available literature you're lost.

"What will it cost to install a really good outfit" is one of the vital questions asked. I would say from $250 to $300. You can easily spend twice as much and get no more. Of course, I am speaking *now* of the ordinary set in plain cabinet and the proper accessories—and the accessories always cost as much or more that the set itself. If you demand inbuilt loud-speakers, "period" consoles or radio and phonograph combined, prepare to write a check for twice the amount named. One hundred to one hundred and fifty dollars will buy a stripped set which will meet any ordinary demand. Give it a good outside antenna, if you can; make an effective ground, attach the best 120-amp hour A battery you can find and the latest B current supply; then connect with your reproducer (don't experiment or economize here), slip in your carefully tested tubes, and tune in. After a month or so you'll be accomplishing things which will astonish the natives, provided, of course, some one of them hasn't picked up or carefully collected an outfit which outranges you. In that case you'll be in the market for "something better"—and will be selling your "old friend" at a great sacrifice.

Finally, answering another question: I venture the opinion that the most modern sets (not those of a year ago) will hardly be improved on for some time to come. Now is a good time to secure a good set, also to studiously avoid the purchase of outfits which are already distinctly *passe*.

DUE CREDIT

It is a pleasure to announce that we have discovered the author of the tribute to the family doctor, which appeared on p. 191 of our March issue, under the title "I Am," credited to *Medical Insurance*. It was written by George C. Wellons, vice president of the Wm. A. Webster Co., of Memphis, Tenn.

SO THAT'S WHERE THEY GO!

A rich but very eccentric man died. The clergyman, who was young and new to the parish, thought it a fitting opportunity to call and comfort the widow. "You must not grieve," he told her. "The body that lies here is not your husband. It is merely a husk, an empty shell—the nut has gone to heaven.—*Pickup*.

WATERED STOCK

According to scientific investigation, the ingredients of a man, plus water, are as follow:

Fat enough for seven bars of soap.
Iron enough for a medium-sized nail.
Sugar enough to fill a shaker.
Lime enough to whitewash a chicken coop.
Phosphorus enough to make 2,200 match tips.
Magnesium enough for a dose of magnesia.
Potassium enough to explode a toy cannon.
Sulphur enough to rid a dog of fleas.

This whole collection is worth ninety-eight cents, and that in a day when things are three times as high as they used to be. *Collier's*.

—But, consider the "brass" some men possess!—*C*.

FORCE OF HABIT

"You took that little blonde from the notions department home last night, didn't you?"

"I'll say I did, and I kissed her good night, too."

"What did she say?"

"Oh, she just said, 'Will that be all?'"

FOLLOWING MEDICINE

"I heard your son was an undertaker. I thought you said he was a physician."

"Not at all. I just said he followed the medical profession."

Selected.

SCOTCH, OF COURSE?

The late Rev. Dr. John Hall was once walking home from preaching at a Sunday night meeting out in the country. In the moonlight he saw a man lying drunk in the gutter and going up to him gave him a shake. "Here," he said, "it is a shame for a nice, respectable looking man like you to be lying in the gutter like that." The man opened his tipsy eyes and saw the long black coat. He said, "Are you a minishter?"

"Yes," said Dr. Hall, "come, get up out of there."

"Preshbyterian?" queried the Inebriate.

"Yes," was the answer somewhat impatiently, "I am."

"Then," said the other, "Help me up, I'm a Preshbyterian myself."

Bolton Hall.

NOT SO BAD

Teacher: "Willie, do you know what a paradox is?"

Willie: "Sure! A parodox is two doctors."

Ad-Chat.

—Then a paragon would be a "coupla" dead ones, and parapets would be a "coupla" flappers.—*Gym.*

End of the line—All off, Please!

—*C.*

IF I KNEW YOU AS I KNOW ME

If I knew you as I know me this world a paradise would be;
Then each of us true pals would be, if I knew you as I know me.
We never would discuss our faults or talk about our if's or ought's.
To all our neighbors, friends we'd be, if I knew you as I know me.
And when we meet I'd grasp your hand and say you're looking fine "old man"
And you'd think well of Billie Meek; of Sammie Rice you'd kindly speak.
Toward our friends we'd Christ-like be, if I knew you as I know me.
If I knew you as I know me, 'twould us the "giftie gie, to see ourselves as others see."

And make us love the "onery cuss" who did us wrong and lied on us.
If I knew you as I know me the best in you I'd always see,
And all the unkind things you'd said 'bout me in memory would be dead.
We'd just forget our faults each day if I knew you as I know me.
If I knew you as I know me along life's path we'd sing our way,
A smile, a kindly word, and then, to our good deeds there'd be no end,
Because we'd just forget each wrong and life to us would be a song,
And no discordant note there'd be, if I knew you as I know me.
If I knew you as I know me this world a Paradise would be,
Then each of us true pals would be, through Time and through Eternity.

CHARLES FOX ANDERSON, M.D.
Lexington, Kentucky.

Jimmie: "We've got a new baby down at our house."

Elderly Neighbor: "How nice—and did the stork bring it?"

Jimmie: "Oh, no. It developed from a unicellular amoeba."

Thumbnail Therapeutics

ARSPHENAMINE INJECTIONS

If, when giving arsphenamine intravenously, some of the drug leaks out under the skin, all unpleasant effects can be avoided by *immediately* and slowly injecting into the effected tissues a proportionate quantity of a 5-percent solution of sodium thiosulphate.—DR. ELBERT CLARK.

CHRONIC ENDOCARDITIS

Daily doses of 3 grains of a good preparation of sodium cacodylate, in 1 Cc. of sterile water, given intravenously, are frequently of great benefit. Use a 27 or 28 gauge needle, so as not to spoil the veins. If the cacodylate is potent, the patient will smell of garlic all the time.—DR. J. H. MC CLELLAN.

MASTOIDITIS

Mastoid operations are easier in the second or third week of the disease, after the structures have "softened up", but *do not wait* for this to happen if symptoms indicate surgical intervention at an earlier date.—DR. C. J. SWAN.

PARATHYROID SUBSTANCE

Parathyroid is apt to be unsatisfactory and unreliable, regardless of who puts it up. This in no way implies dishonesty or inefficiency on the part of any pharmaceutical house.—JAMES H. HUTTON, M. D.

DIRECT HERNIA

When a young or old man presents himself with the bulge of a hernia, direct from its beginning, conservative measures should be advised. — Editorial in *Therapeutic Gazette.*

MASTOIDITIS

In mastoid cases, secure drainage *at once*, through the nose and the ear; then, if septic symptoms do not improve, do a mastoidectomy. Try to operate *before* complications develop.—DR. C. J. SWAN.

INSULIN

Insulin is not a *cure* for diabetes, and is indicated only in very severe cases. Ninety-five percent of the usual run of cases do not need it and should not receive it.—THEODORE TIEKEN, M.D.

RADIUM

Radium should *not* be used in treating large uterine fibroids, nor in case of acute or chronic pelvic inflammations. In women under 40, it should be used only with great care, lest sterilization or, possibly, chemical castration result.—DR. R. A. SCOTT.

TYPHOID HEMORRHAGE

If hemorrhage occurs in typhoid cases, stop *everything* by mouth and give enough morphine to put the bowel at rest.—DR. R. B. STOLP.

BRONCHOPNEUMONIA

"It must be remembered that the normal range of temperature in bronchopneumonia is from 101° to 104.5° F. This temperature is not in itself exhausting, and the chances of recovery are not, I think, improved by systematic efforts at reducing it, so long as it remains within these limits.

"Too much can not be said in condemnation of the practice of giving drugs for reduction of temperature.—HOLT.

HEMOPTYSIS

I have found that in cases of severe hemoptysis much good is accomplished by the diversion of blood to the surface which is produced by giving 1/25 of a grain of atropine, hypodermically. The family doctor can do this.—BABCOCK, before the Chicago Tuberculosis Society.

COD LIVER OIL

When indicated, there is no substitute for cod liver oil in feeding tuberculous patients. —TUTEUR, before the Chicago Tuberculosis Society.

NEOSALVARSAN IN ANTHRAX

One injection of neosalvarsan is generally sufficient to cure anthrax. This treatment is also recommended to veterinarians.—GRASSER, *Wien. klin. Woch.*, 1924.

CONSTITUTIONAL INADEQUACY

may be defined as a state of bodily and mental make-up which handicaps the individual in his adjustment to the various environmental stresses.—DR. GEO. H. HYSLOP, Bellevue Hospital, New York City.

HYSTERIA

Avoid opiates in hysteria. The hysterical attack is due to lack of self-control, and no drug weakens self-control more effectively than does opium.—Dr. Bernard Fantus.

PAIN

An excellent analgesic mixture consists of ½ grain of codeine with 3 grains of pyramidon.—Dr. Bernard Fantus.

MERCURY INUNCTIONS

The effect of mercury inunctions is best obtained by rubbing the ointment in for 30 minutes (full time) and then sponging off any excess with benzine. This latter procedure leaves the patient and his surroundings clean and in no way interferes with the effectiveness of the treatment.—Drs. Cole, Hutton and Sollman, in *J.A.M.A.*, January 19, 1924.

CHLORAZENE IN GONORRHEA

In treating acute gonorrhea in women, douches (twice daily) and endocervical applications (once daily) of chlorazene solution are of marked value. Solutions for douches, 1-1000 to 1-5000; for topical applications, 10 percent.—J. J. Abraham, *Lancet* (London), 1924.

PAREGORIC

The comphorated tincture of opium is one of the best preparations of this drug, especially for children. When it is indicated, *give enough.* Remember that a teaspoonful equals 1/32 of a grain of morphine.—Theodore Tieken, M.D.

PERNICIOUS ANEMIA

A 5-percent solution of potassium iodide, in doses of 3 drops t.i.d., given for long periods, combined with arsenical treatment, seems to produce favorable results in pernicious anemia.—Dr. G. Haller, *in W.K.W.*

DIARRHEA

Diarrhea, occurring in feverish infants, may be arrested by the addition to each 100 Cc. of milk, of 8 drops of 12.5 percent hydrochloric acid.—Dr. F. Demuth, in *Klin. Woch.*

PITUITRIN

Before using pituitrin in obstetrics, the pharmacology of the drug and the condition of the patient should be thoroughly studied, as the procedure is not without serious danger if carelessly used.—Suggested by article of Dr. D. Deutschman, in *Med. Jour. & Rec.*

COLD COMPRESS

A very large compress reaching from the clavicle to the pubis, wrung out of ice water pinned around any fever patient with a hot skin, covered with a dry towel and changed once every hour, is far better, safer and easier for controlling temperature than any other method I have used, and should be used much more generally.—Torbett in *Med. World.*

UTERINE HEMORRHAGES

Bleeding from the uterus, due to almost any cause not connected with parturition can be controlled more promptly and for longer periods by fluid extract of condurango, given in 20-minim doses every 2 hours, to effect, than by any other drug I know.—Dr. C. W. Maxwell, in *Med. Jour. & Rec.*

USE OF SILVER SALTS

If there are raw surfaces in the nose and throat, use solutions of silver nitrate, of appropriate strength: if the membranes are intact use argyrol or some other colloidal silver.—Dr. Burton Haseltine.

BICHLORIDE OF MERCURY POISONING

If the patient is seen immediately after the ingestion of the corrosive sublimate, the best treatment is to wash out the stomach with a 1 to 1000, unfiltered solution of calcium sulphide and follow with 300 Cc. of mucilage of acacia, U.S.P.

If gastrointestinal symptoms, other than vomiting, have occurred the calcium sulphide is contraindicated.—Dr. W. H. Ziegler, in *Jour. Lab. & Clin. Med.*

VERTIGO

Relief has been obtained in certain forms of vertigo by the administration of large doses (10 to 15 drops) of adrenalin between meals; i. e., at least 1-2 hour before a meal. A potent preparation, of the highest quality, marketed in dark bottles, should be used.—Dr. Barbazan, of Paris.

HYPEREMESIS GRAVIDARUM

Two grains of luminal-sodium, given 1 hour before each meal and at bedtime relieves some cases not amenable to simple measures.—Dr. H. E. Miller, in *New Orleans M. & S. J.*

Current Medical Literature

TRYPARSAMIDE

Although tryparsamide has only recently been placed on the market for general sale, there is accumulating a good deal of literature relative to its use.

One of the most recent articles, by Drs. Udo J. Wile and Lester M. Wieder, of Ann Arbor, Mich., appeared in the *J. A. M. A.* for December 6, 1924. These observers conclude:

"In our hands, tryparsamide has shown itself, during a brief period of observation, of great service in causing a profound change for clinical betterment in certain groups of cerebrospinal syphilis cases, notably in some cases of general paralysis.

"In 5 of our cases the treatment by tryparsamide was followed by clinical improvement when other forms of therapy, including intraspinal treatment, had failed.

"Before accepting any of these conclusions as final. . . . a greater period of time must elapse. . . . before accepting clinical improvement as definite evidence of the therapeutic activity of the drug."

Lorenze, Lovenhart, Reitz and Eck, of Madison, Wisconsin, in the *Am. J. M. Sci.*, for Aug. 1924, reported similar favorable results in 185 cases over a period of 2 years. They called attention to the occurrence of untoward eye symptoms during the administration of tryparsamide, which were not noted by Wile and Wieder.

Moore, Robinson and Lyman reported on 241 cases in the *J. A. M. A.* for Sept. 1924. Their results, in cases of neurosyphilis were equally good, but they found the drug of little or no value in other forms of syphilis.

They reported eye symptoms in 17.8 percent of their cases but only 2.8 percent had any permanent visual injury, and they believe that this number can be decreased by proper ophthalmological control of treatment.

In *Colorado Medicine*, for January, 1925, Drs. C. S. Bluemel and Wm. M. Greig, of Denver, report a series of 50 cases of neurosyphilis in which they used tryparsamide, each of whom received 16 injections at weekly intervals, with the following results: "Sixteen patients improved; sixteen showed no material change; nine were worse; and nine died during treatment. Four suffered visual impairment amounting virtually to blindness."

PHYSIOTHERAPY

In *The Journal of Radiology* for December, 1924, Dr. B. B. Grover, of Colorado Springs, presents an interesting discussion of the place filled by the various physiotherapeutic procedures in the practice of medicine.

He considers autocondensation, medical diathermy, surgical diathermy, etc., and summarizes the present position of physiotherapy as follows:

"The charge that those who employ physical measures are drug nihilists will not stand. We are all believers in efficacy of drugs and surgical pocedure, but we have learned that physical methods will relieve many conditions where drugs singly fail; and we have also learned that many conditions are relieved more easily and promptly by physical measures than by drugs, and that many surgical conditions are anticipated and successfully combatted.

"He who thinks that physiotherapy is all that is needed in medicine is building air castles; he who thinks there is nothing worth while in physical therapy may still believe the world to be flat, but he who believes that electricity and other physical measures are potent agents in relieving human ailments is safe and sound."

PROGRESS IN CHEMOTHERAPY

Chemotherapy has made such strides in the past few years that it begins to appear as though it would soon have to be classed as a definite and separate branch of medical science, along with physiological chemistry, bacteriology, etc.

The above classification is explicity endorsed by Drs. G. W. Raiziss and I. Tulchinsky, of Philadelphia, in their excellent article on "Recent Developments in Chemotherapy", in the October number of *The Urologic and Cutaneous Review*. Anyone who is interested in the details of this fascinating field of research should send for a reprint of this article.

The authors feel sure that, at the present time, due to great advances in the processes of its manufacture, neoarsphenamine is superior to arsphenamine in the treatment of syphilis, for the following reasons:

1.—It is a neutral compound, so that its intravenous injection causes no disturbance of the blood, such as is caused by arsphenamine.

2.—In concentrations ordinarily used, it it not hemolytic. Arsphenamine is.

3.—It is more readily soluable than arsphenamine, and hence can be used in stronger solutions, and given with a hand syringe.

4.—It is tolerated better than arsphenamine. Reactions are rarer and milder.

5.—It is preferred by the patient, because there is less pain, trauma, risk, and time consumed.

Where it is necessary to give intramuscular injections, sulpharsphenamine may be used, but it is inferior to neoarsphenamine or arsphenamine as a remedy for lues.

In summing up their paper, the authors call attention to the fact that chemotherapy is rapidly providing specific remedies for diseases in which serum and vaccine therapy have, so far, failed, and to the importance which chemistry is assuming in the study and treatment of bodily abnormalities and diseases.

BISMUTH IN LEPROSY

Doctor Nicolas V. Greco and Adolfo H. Muschietti, of Buenos Aires, have contributed an interesting article on the above subject to *La Semana Medica*, for November 27, 1924, and as a result of their studies they conclude:

"1.—We have, in bismuth medication, in the form of basic salicylate of bismuth or other preparations, a treatment for leprosy at least comparable to that with chaulmoogra oil and its derivatives, if not more active.

2.—The earlier in the disease the treatment is given, the better the results obtained.

3.—Bismuth and its derivatives constitute a new medium for the prevention of leprosy."

PROGRESS IN DENTAL EDUCATION

Dr. Truman W. Brophy, recently elected president of the *Federation Dentaire Internationale*, had some very pertinent remarks to make relative to the progress of dental education during the past decade, and closer cooperation between the medical and dental professions. (J. Amer. Dental Assoc., Jan. 1925).

"In our dental schools," says Doctor Brophy, "constant improvements have been made. Courses of study have been lengthened. Higher educational requirements for admission have been demanded. More thorough instruction is given in the field of dental pathology and surgery, and numerous laboratories have been established for scientific research . . . The secretions of the mouth; the influence of pathogenic microorganisms, locally as well as constitutionally; the question of foci of infection leading to arthritis, neuritis, appendicitis, gastrointestinal ulcers and many other maladies are now receiving careful investigation and consideration on the part of dentists who have been thoroughly qualified to teach research work."

On the other hand, we will find that the student in the medical school is giving little or no time to the vast field covered in the curriculum of the dental school because the medical school makes no provision for it. It is an important part of a dentist's mission to cooperate with the family physician on dietetics, as applied to the mother and unborn child, thus developing in the child greater vigor and, with it, better dentures. The dentist should induce medical men to urge upon the families in their charge the importance of carrying out oral prophylactic measures. The medical student should be required to become familiar with dental pathology. In New Zealand, medical students are not permitted to graduate in medicine until they have had one year in the study of dental organs and the treatment called for in their diseases.

When the medical colleges make it obligatory for their students to take a full course in dental histology, physiology, anatomy and pathology, and to learn the course of treatment called for in the management of innumerable diseases of the teeth; when they take up, and become familiar with, the work of oral surgery and make it obligatory; when the dental colleges establish hospitals and require a course in practical oral surgery—the surgical tragedies which are now being enacted will be displaced by the logical course of eliminating disease and preserving normal tissue.

The outstanding retrograde movement, in both the medical and dental profession in the last quarter century, has been the unnecessary and appalling sacrifice of teeth, extracted by dentists on the advice of physicians. Too often physicians have sent patients to the exodontists with instructions to remove indicated teeth, without having beforehand consulted with a well-trained dentist. If he had done so, he would have had the benefit of a clinical examination, which should always be coordinated with a roentgen-ray examination; he would have had the judgment of one who knows the histology, the physiology, the pathology of teeth, and the appropriate treatment. And

the patient, who is, after all, the one most concerned, would, in all probability, have been saved many teeth.

A. D. B.

SYPHILIS

In the *Virginia Medical Monthly*, for Dec. 1924, Dr. T. L. Driscoll, of Richmond, gives some ideas in syphilology, and concludes:

"Basing my deductions on the study of three hundred syphilitics, it would seem that a Wassermann-fast blood is in reality a drug-fast condition. The means of preventing this to limit the amount of any single drug given.

"In the administration of arsphenamine, which is our most active treponemicidal agent, a maximum dose should be the initial dose, due consideration, of course, being given conditions and constitutional contraindications.

"And, finally, the cerebrospinal system should be looked upon, at all times, as being potentially a focus of infection.'

INHERITANCE IN TUBERCULOSIS

There has been an idea generally prevalent, especially among the laity, that tuberculosis is a heritable disease, or, at least, that a *tendency* to the disease could be inherited.

In the *American Review of Tuberculosis* for November, 1924, G. J. Drolet, Statistician of the New York Tuberculosis Association, in an article representing a very large amount of research, presents evidence distinctly contrary to the above idea.

Drolet believes that the previous tuberculization of the parents, instead of causing a predisposition to the disease, on the part of the children, confers a certain degree of immunity upon them; and that this inherited immunity is one of the factors which has contributed to the steady decrease in tuberculosis during the last half-century.

Anyone who is interested in tuberculosis work would do well to write to the New York Tuberculosis Association, 224 Madison Avenue, New York City, for a copy of this reprint, and study it carefully.

SIMPLE TESTS OF RENAL FUNCTION

In *Northwest Medicine* for December, 1924, there appears an extremely interesting and practical article by Dr. Philip S. Hench, of the Mayo Clinic, Rochester, Minnesota, describing several tests for renal function which can be performed by any general practitioner and will give important information as to the condition of the kidneys.

The most important of these tests is the salivary urea index determination, which can readily be done in the office in fifteen or twenty minutes, and which is almost as reliable for diagnosis and prognosis, as the determination of blood urea. The technic of this test is too long to reproduce in an abstract.

The simplest test given is the water test.

Fifteen hundred cubic centimeters of water are given, on an empty stomach, at 8:00 a. m. Urine collections are made at half-hour intervals for the next four hours. The normal output in this period varies between 1200 and 1800 Cc.; the specific gravity should be at least as low as 1003. Marked variations from these figures indicate kidney disease.

[We earnestly recommend every physician who is doing any laboratory work at all to write to Dr. Hench for a reprint of this article.—ED.]

NEW URINARY ANTISEPTIC

Dr. Veader Leonard, of John Hopkins University, in the December 1924 number of *The Journal of Urology*, reports experiments on a new synthetic urinary antiseptic, hexyl resorcinol, from which he concludes:

1.—That it is the most powerful germicide ever described as nontoxic.

2.—That its use, by mouth, over prolonged periods, causes no damage to the kidneys or other organs.

3.—That it is excreted, unchanged, by the kidneys, and renders urine of any reaction bactericidal.

4.—That it is of little or no value in infections of the kidneys.

A good bibliography is appended.

GONORRHEA AND HEAT

The idea of using heat in the treatment of gonorrhea is not new, having been reported by Fulton, in 1913, and later by Vorner, Weiss and others. The methods by which the heat has been applied have, however, hitherto been more or less cumbersome and inexact.

It is now a well-established fact that the gonococcus is almost instantly destroyed at a temperature of 113° F. and by prolonged exposure to temperatures slightly

less than this. It has also been demonstrated that most, if not all, of the mucous surfaces of the body can be subjected to a temperature of 113° F. without the slightest tissue destruction.

In the January, 1924, number of *Surg. Gyn.* and *Obst.*, Drs. Budd C. Corbus and Vincent J. O'Conor, of Chicago, report an instrument which they have devised for the treatment of gonorrheal endocervicitis, by means of controlled and regulated diathermy. This instrument can be operated by any diathermy machine which will supply 800 to 1000 milliamperes of current.

Thirty-five women have been treated by this method, of whom twenty-two have been observed for a period of two years or more. In all the gonoccocus has remained permanently absent after a maximum of 7 treatments.

The article is brief, clearly and practically written, well illustrated and includes a working bibliography in connection with the use of heat in gonorrhea.

OTITIS MEDIA

In *Le Journal Medical Francais* for October, 1924, Dr. Georges Liébault presents a very thoughtful and practical paper on the treatment of acute otitis media.

One of the most interesting points is his sound argument for the use of intranasal antiseptics in the form of ointments or jellies rather than in watery or oily solutions. He shows how the former preparations can be placed exactly where needed and maintain their action for a considerable period of time.

Dr. Liébault divides the treatment into three stages, in which he recommends the following:

1.—Before rupture of the drum.

(a) Clean and disinfect the nasal passages and try to secure eustachian drainage.

(b) Instill phenolized glycerine into the external auditory canal night and morning.

(c) Apply warm, moist external dressings to relieve the pain.

2.—After rupture of drum (spontaneous or surgical):

(a) Continue nasal treatment and external dressing.

(b) Syringe the ear, as often as necessary, with mildly antiseptic solutions, as boric acid.

(c) Do *not* instill phenolized glycerine.

3.—Convalescence:

(a) Gradually diminish lavages, as discharge ceases.

(b) Continue the warm, moist dressings.

(c) Watch the nose and keep up adequate ventilation. If a tendency to chronicity appears, institute suitable surgery to secure nasal drainage and ventilation.

MILK INJECTIONS IN ERYSIPELAS

In our January number (p. 61), an article dealing with antistreptococcus serum in erysipelas was abstracted. It now appears that there is a quicker, simpler and less expensive treatment which gives as good or better results.

In the *Canadian Med. Assn. Journ.* for December 1924, Dr. Thomas A. Lebbetter of Yarmouth, N. S., states that Prof. Schmidt treated 52 cases of erysipelas by intramuscular injections of boiled milk, of which 31 were controlled within 24 hours and 47 within 72 hours; and that Drs. Chalier and Jacques reported in the *Lyon Medicale* for May, 1924, that they had obtained favorable results by this method in 4 out of 6 cases.

Dr. Lebbetter then gives, in detail, a number of cases which he has treated in this manner. Of eleven cases which he saw before the fifth day and to which he administered the boiled milk, *all* had the temperature reduced to normal and all other symptoms arrested within 72 hours.

[While the technic of preparing and administering boiled milk is not at all complicated, it is not always easy to carry out the processes satisfactorily under the conditions often encountered by the general practitioner. All possible difficulties can now be obviated, however, because there are available preparations of milk proteins in ampules, by means of which this treatment can be given as easily as a hypodermic injection. The practitioner who has a box of these ampules in his medicine case is ready for emergencies.—ED.]

ARGYROL AND PROTARGOL

It has frequently been said that solutions of organic silver salts "will not keep". Hitherto few seemed to know just what that

meant, and there have been no definite experiments to settle the question.

In the *Journal of Laboratory and Clinical Medicine*, for November, 1924, Torald Sollman and J. D. Pilcher, of Cleveland, report a series of experiments conducted with protargol, argyrol and silvol, checked against solutions of silver nitrate. Their conclusions follow:

1.—Solutions of colloidal silver compounds change in antiseptic efficiency on keeping.

2.—Protargol solutions become less efficient; but, even after a year, the change would be of no clinical importance.

3.—Argyrol and silvol become more antiseptic but more irritant. The change is rapid and in a week might modify the clinical result.

CHLORAZENE IN UROLOGY

Those who treat venereal cases and other infections of the genitourinary tract (this includes all urologists and most general practitioners) are keenly interested in any new information regarding antiseptics which may be used in this locality without the danger of setting up destructive irritation which will result in strictures.

In the *Journal of Urology*, for November, 1924, Dr. H. C. Rolnick reports the results of an instructive series of experiments to determine the effect of various antiseptics on the genitourinary tract. These experiments were made by injecting the substances to be tested into the *vasa deferentia* of dogs, and noting the changes which occurred in these structures, both by gross and microscopical examination.

As a result of these experiments, Rolnick concludes that chlorazene is the safest of all the antiseptic solutions which are usually employed in these cases. While the usual strengths employed for injection are 1-1000 to 1-400 solutions, Roluick used solutions of 1 and 2 percent and, even after these strong solutions, found that only one vas deferens was completely occluded out of twenty animals treated.

THE KAHN TEST FOR SYPHILIS

Every physician should be familiar with the Kahn test for syphilis, which is now coming into very general use. William Levin, D.P.H., discusses it quite thoroughly, with a good bibliography, in the December 1924 number of *Northwest Medicine*.

Parallel Kahn and Wasserman tests, made on 2542 blood specimens, showed agreement in 94.5 percent of cases. In 71 treated cases the Kahn test proved to be more sensitive than the Wassermann test. In primary syphilis both tests appear at about the same time.

The Kahn test is simple, easily performed and very reliable and should be used as a check and supplement to the Wassermann test.

TREATMENT OF METALLIC POISONING

Now that the heavy metals, mercury, arsenic and bismuth, are being used so widely in the treatment of syphilis, all are interested in knowing how to treat the untoward symptoms which not infrequently arise, such as salivation and dermatitis

Dr. Robert E. Jameson, of Davenport, contributes a brief and interesting article on this subject to the December number of the *J. Iowa Med. Soc.*, in which he speaks highly of the results obtained by the use of sodium thiosulphate in these cases.

Several foreign preparations of this drug have been on the market, but Dr. Jameson remarks:

"An American preparation manufactured by the Dermatological Research Laboratories, of Philadelphia, has been accepted and has been used for the past several years and found to meet every requirement —therapeutically efficient. In fact, two preparations are made by the above-mentioned company, namely: simamina and sodium thiosulphate."

New Books

DE LEE: "OBSTETRICS"

The Principles and Practice of Obstetrics. By Joseph B. DeLee, A.M., M.D. Illustrated. Fourth Edition, thoroughly revised. Philadelphia: W. B. Saunders Co. 1924. Price $12.00.

Dr. J. B. DeLee needs no introduction to the medical profession of this country, his work being so well and widely known, and the earlier editions of this textbook (of which the present is the fourth) being familiar to all who do obstetrical work.)

This edition has been subjected to painstaking revision, both in text and illustrations, and considerable new matter has been added, notably in the sections dealing with hyperemesis gravidarum; syphilis; the use of x-rays in diagonsis, etc. In the section on Operative Obstetrics, twelve new illustrations have been introduced, showing the technic of the low, cervical cesarean section.

Too much credit can not be given Dr. DeLee for the strongly conservative attitude which pervades the book. While it is true that the obstetrical specialist, who works in well-equipped hospitals with abundance of assistances, can achieve brilliant results, by operative means, in desperate cases, the fact remains that most children are today brought into the world in their own homes and under the ministration of the family physician.

Dr. DeLee has devoted much attention to showing the general practitioner how to meet the conditions he will encounter in his daily obstetrical practice and has made the indications for such procedures as version, forceps, cesarean section, etc., very clear.

There is probably no better text on this subject.

SAMPSON: "PHYSIOTHERAPY TECHNIC"

Physiotherapy Technic, a Manual of Applied Physics. By C. M. Sampson, M.D. Illustrated. St. Louis: C. V. Mosby Company. 1923. Price $6.50.

In order to achieve satisfactory results in any field of medical activity, it is necessary that the physician be in possession of the largest possible amount of knowledge regarding the particular subject, and then use the utmost thoroughness and judgment in examining his patient, deciding on the form of treatment to be used, and adapting the technic to the fundamental laws of nature and the circumstances of the case. Physiotherapy is no exception to the above general rules.

Before purchasing the expensive equipment necessary for the treatment of patients by the various forms of electricity, ultraviolet light or other instrumentalities of like kind, every physician should read some book like the one under review, in order to learn the indications and methods for using such treatments, and what results may be expected.

This volume deals with the general principles underlying these forms of treatment, and then considers the various electric modalities, light, hydrotherapy, etc., in detail, using illustrations and case reports where needed to clarify the text.

BARNES: "MENTAL DISORDERS"

An Introduction to the Study of Mental Disorders. By Francis M. Barnes, Jr., M. A., M. D. Second Edition. St. Louis: C. V. Mosby Co. 1923. Price $3.75.

This is not a manual of psychiatry, but an introduction to the subject, and is intended to prepare medical students for more detailed work to come later, and to furnish social workers, nurses and others who come in contact with people in a more or less professional relation, with a guide, by means of which they may come to a conclusion that a certain person *is* mentally disordered, without attempting to decide what the disorder may be.

Much time is spent upon the examination of patients, in order to determine their antecedents and environmental reactions, and very little upon mental diseases as such. Illustrative cases are cited.

CAMPBELL: "TREATMENT"

Fundamental Principles in Treament. By Harry Campbell, M.D., B.S., F.R.C.P. New York: William Wood & Co. 1924. Price $4.00.

The number of medical books is increasing very rapidly, and most of them are valuable

to *some* members of the profession; only a very small proportion are of interest and service to every physician. This volume is one of the few.

The author has, in very truth, gone back to fundamentals and begins by discussing the physician himself—his education, personality and aptitudes—and the patient, with all his variations in character, environment, heredity and habits.

Following this he considers the great bodily systems—the plasma, the endocrines, the psychic mechanism, etc., in their relations to diseased conditions and their treatment; and then deals with those great therapeutic instrumentalities which are of universal application, such as, fresh air, exercise, rest, food and clothing.

There is no doubt in the minds of most physicians that chemical drugs, serums and vaccines have a large and definite place in the treatment of disease, but a great many are prone to place their confidence on such methods alone, giving insufficient consideration to the fact that disease always means disturbed physiology, and that the basis of all therapeutics should consist of an attempt to restore the bodily functions to their normal condition and degree of activity.

In the midst of the scores of books by and for specialists, it is refreshing to find one of which it can truthfully be said that no physician can read it thoughtfully without becoming a more efficient doctor and a more serviceable member of his community.

LOWRY: "WHAT DOES YOUR CHILD WEIGH"

What Does Your Child Weigh? By Edith B. Lowry, M.D. Chicago: Forbes & Company. 1924. Price $1.25.

There has been a tendency of late to exalt the weighing of children into a fetish and many mothers have lost sleep because their children were "underweight," forgetting that the proper weight for a yearling draft horse is quite different from that for a yearling race horse—and that the same is true of folks.

Doctor Lowry recognizes this situation, but still feels that, in our present state of knowledge, the weighing of children and studying of the results may be carried on with much profit.

The book is not unduly cumbered with statistical tables, but contains a practical outline of the causes of true underweight and suggestions for their correction.

The chapters on foods and feeding are explicit and valuable. Any physician who handles children can read the book with profit, and it is written in so simple a style that it can be loaned to the mothers of his little patients.

WHITE: "SMALLPOX AND VACCINATION"

Smallpox and Vaccination. By Benjamin White, Ph.D. Cambridge: Harvard University Press. 1924. Price $1.00.

This little book is one of the "Harvard Health Talks," and was written, so the author says, "to present a description of the disease and its ravages, its present prevalence and its threatened dangers; to discuss the practice of vaccination; and, finally, to show that compulsory vaccination, intelligently conceived and rigorously enforced, is the one certain means of safeguarding ourselves against this noisome pestilence."

Here is excellent ammunition to use against our misguided brethren, the anti-vaccinationists.

BOWERS: "PSYCHIATRY"

Manual of Psychiatry for the Medical Student and General Practitioner. By Paul E. Bowers, M.S., M.D. Philadelphia and London: W. B. Saunders Co. 1924. Price $3.50.

Every physician will, in the course of his practice, meet with cases of mental alienation, which it is important to recognize as early as possible.

A considerable number of the patients which every physician sees are suffering from some form of neurosis of psychoneurosis, an adequate understanding of which is necessary if their health is to be reestablished.

There is probably no class of diseases which is less well understood than those affecting the nervous system and the psychic mechanisms, whereby the adequate adjustment of the individual to his environment is disturbed.

The present volume is intended primarily for general practitioners and students, and, therefore, all controversial and academic matter is omitted, and space devoted to such information as will enable the man who is not an alienist to properly evaluate the mental condition of a patient.

Considerable attention is given to the proper taking of a history in these cases; and signs and symptoms are arranged in groups and tables to facilitate diagnosis.

Stress is laid, throughout, upon the fact that pinning a label on a mental condition does not end the physician's responsibility, and that he should constantly remember that he is not treating *cases* of dementia præcox or paranoia, but *people*, who, for some reason, have ceased to react normally to their environment, and who must be studied, individually, to determine the cause of the maladjustment and remove it where possible.

Every physician should have a book of this character in his library for study and reference, and the present volume fulfills the purpose very well.

ABT: "PEDIATRICS"

Pediatrics. By Various Authors. Edited by Isaac A. Abt., M. D. Vol. IV and V. Illustrated. Philadelphia: W. B. Saunders Co. 1924. Price $10.00 per volume.

This monumental encyclopedia of the diseases of children, containing the work of practically every prominent pediatrician in the country, and edited by the Professor of Diseases of Children, Northwestern University Medical School, Chicago, needs no extended comment to convince our readers of its importance.

Vol. IV deals with the thorax and its contained organs; the blood and blood-vessels; the endocrine glands; the spleen and lymph-nodes; and the genitourinary organs of the male and female.

Vol. V considers the face and jaws; tuberculosis; hereditary syphilis; and the infectious diseases, including a discussion of infection and immunity.

Both volumes are well prepared and adequately illustrated.

This system appears to be indispensable to all pediatricians and a valuable reference work for the library of any physician.

"RADIUM REPORT"

Radium Report of the Memorial Hospital, New York. (Second Series, 1923.) New York: Paul B. Hoeber, Inc. 1924. Price $5.00.

The work of the Memorial Hospital, New York, is generally accepted as the last word on the subject of Radium. The results obtained are matters of the utmost interest to all physicians and surgeons. The safe and sane attitude of conservatism displayed in the foreword is the keynote of the entire work and this very attitude makes this most unusual report one of utmost interest and value. Detailed case histories and controls are submitted and technic is discussed in detail.

To the medical man who gives radium treatment, this book is indispensable, as all the information a medical man requires for the treatment of his cases is here given in a concise and practical form. To all members of the profession, it will prove invaluable in that it gives at a glance "the truth about radium." This book constitutes a valuable record of careful and systematic work. A well-planned index adds to its value as a work of reference.

LEVI: "THE HIGHEST SCIENCE"

The Paradoxes of the Highest Science. In Which the Most Advanced Truths of Occultism are for the First Time Revealed (in order to reconcile the future developments of science and philosophy with the eternal religion). By Eliphas Levi. With Footnotes by A Master of the Wisdom. Second Edition. Adyar, Madras: Theosophical Publishing House. 1922. Price $1.25.

PRICE: "PUBLIC HEALTH"

Hygiene and Public Health. By George M. Price, M.D. Third Edition. Thoroughly Revised. Philadelphia and New York: Lea & Febiger. 1924. Price $2.25.

In these days, when preventive medicine is coming in for more and more consideration, it behooves every physician to keep himself in touch with what is known on the subject of hygiene and public health. The time devoted to these subjects when most of us were in medical school was very short and, even if we haven't forgotten what we learned in school, a lot of things have happened in sanitary science since then.

There are dozens and scores of scholarly and authoritative works for whole-time health officers, teachers and research workers along these lines and there are several good handbooks which epitomize the essentials of the subject, for the benefit of rural health-officers and all physicians, nurses, social workers and the like, who have not the time to spend on the more elaborate volumes. This book is a good example of the latter class.

As this manual deals largely with questions of public health, all reference to personal hygiene has been omitted, and the book is largely devoted to such subjects as: School hygiene; Child hygiene; Industrial hygiene; Public water and milk

supplies; Disposal of wastes; Control of infectious diseases; and the like.

The present (third) edition embodies only such changes as are necessary to bring it up-to-date. The chapters on "Child Hygiene" and "Food" are new.

SEN: "INFLUENZA"

A Treatise on Influenza. With Special Reference to the Pandemic of 1918. By Rajendra Kumar Sen. With a Foreword by Dr. S. R. Harrison. Published by the author from Hurmutty Tea Estate. P. O. Laluk, North Lakhimpur, Assam. 1923. Price 5 s.

BEHNKE: "STAMMERING"

Behnke's Stammering, Cleft-Palate Speech, Lisping. Second Edition, Revised and Enlarged by Kate Emil-Behnke. Chicago: Chicago Medical Book Company. Price $1.25.

COWDRY: "GENERAL CYTOLOGY"

General Cytology. A Textbook of Cellular Structure and Function for Students of Biology and Medicine. By Thirteen Eminent Scientists; Edited by Edmund V. Cowdry. Illustrated. Chicago: University of Chicago Press. 1924. Price $7.50.

AREY: "DEVELOPMENTAL ANATOMY"

Developmental Anatomy; a Textbook and Laboratory Manual of Embryology. By Leslie Brainerd Arey, Professor of Anatomy at the Northwestern Medical School, Chicago. Illustrated. Philadelphia: Saunders Company. 1924. Price $5.50.

FALK: "CHEMISTRY OF ENZYME ACTIONS"

Chemistry of Enzyme Actions. Second and Revised Edition. By K. George Falk, Harriman Research Laboratory, Roosevelt Hospital, New York. American Chemical Society Monograph Series. New York: Chemical Catalog Company. 1924. Price $3.50.

LEVINSON: "CEREBROSPINAL FLUID"

Cerebrospinal Fluid in Health and in Disease. By Abraham Levinson, B.S., M.D. Illustrated. St. Louis: Mosby Company. 1923. Price $5.00.

VIZETELLY: "PREPOSITIONS"

Prepositions; How to Use Them. By Frank H. Vizetelly, Litt.D., LL.D. Managing Editor of Funk & Wagnalls New Standard Dictionary. New York: Funk & Wagnalls. 1924.

ROCKEFELLER FOUNDATION: "MEDICAL EDUCATION"

Methods and Problems of Medical Education. Published by Division of Medical Education, The Rockefeller Foundation, New York. Illustrated. 1924.

AMERICAN LIFE CONVENTION

Proceedings of the Fourteenth Annual Meeting of the Medical Section of the American Life Convention held at Atlantic City, N. J., June, 1924.

NATIONAL COMMITTEE FOR PREVENTION OF BLINDNESS: REPORT

Ninth Annual Report of the National Committee for the Prevention of Blindness. 1923. 130 E. Twenty-second St., New York.

VIETOR: "A WOMAN'S QUEST"

A Woman's Quest; the Life of Marie E. Zakrzewska, M.D. Edited by Agnes C. Vietor, M.D., F.A.C.S. New York: Appleton. 1924. Price $3.00.

ROCKEFELLER FOUNDATION: REPORT

Annual Report of The Rockefeller Foundation, 1923. 61 Broadway, New York.

KERLEY: "WHAT EVERY MOTHER SHOULD KNOW"

What Every Mother Should Know About Her Infants and Young Children. By Charles Gilmore Kerley, M.D. Second Edition, Revised. New York: Paul B. Hoeber, Inc. 1924. Price $0.50.

ROCKEFELLER FOUNDATION INTERNATIONAL HEALTH BOARD: REPORT

Rockefeller Foundation International Health Board Tenth Annual Report, 1923. 61 Broadway, New York.

VIZETELLY: "CONJUNCTIONS"

Conjunctions; Their Use and Abuse. By Frank H. Vezetelly. New York: Funk & Wagnalls. 1924.

GRIFFIN & THOMPSON: "PRACTICAL PATHOLOGY"

Aids to Practical Pathology. By F. W. W. Griffin, M.A., M.D., B.C., and W. F. M. Thompson, Chief Technical Assistant, Virol Pathological Research Laboratories. New York: William Wood. 1923.

MEAGHER: "MASTURBATION"

Study of Masturbation and its Reputed Sequelae. By John F. W. Meagher, M.D., F.A.C.P. New York: William Wood. 1924. Price $1.50.

Medical News

MEDICAL EDUCATION

The Annual Congress of Medical Education, Licensure and Public Health, under the auspices of the American Medical Association, was held at the Congress Hotel, Chicago, March 9 to 12, 1925, and was attended by prominent workers along these lines from all over the United States.

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Above are shown three of the noted attendants, left to right they are: Edw. R. Stitt, M. D., Surgeon General, U. S. Navy; Ray Lyman Wilbur, presiding at the Congress; and Merritte W. Ireland, M. D., Surgeon General U. S. Army.

Many important and vital questions were earnestly discussed, among them the problem of physicians for rural districts, and one of the suggestions made was that medical graduates be allowed to spend two years in actual practice in rural districts in lieu of a two-year interneship.

SCIENCE IN RUSSIA

The Russian Information Bureau, 2819 Connecticut Ave., N. W., Washington, D. C., is striving to establish cooperative relations between scientific workers in Russia and those in other countries.

INFLUENZA APPEARING

Reports are coming in from a number of large cities throughout the country that influenza seems to be again assuming epidemic proportions, with many cases of pneumonia developing.

The Chicago Tribune for March 12, 1925, reports that, up to that date, there have been 201 deaths from this disease in Chicago since March 1.

All physicians should be on the alert, as good results come only by *early* treatment.

CLINICAL STAFF CONFERENCES

The staff of the Norwegian-American Hospital, 1044 N. Francisco Ave., Chicago, holds meetings *daily* at 11:00 a. m., pursuing a regular course of postgraduate instruction. These meetings consist of lectures and clinical presentations and are of the utmost interest.

Physicians living or visiting in Chicago are welcome, and would do well to avail themselves of this opportunity.

For information, address D. Harry Noskin, 1618 W. Chicago Ave., Chicago, Ill.

VENEREAL DISEASE IN 1924

The U. S. Public Health Service states that 363,063 cases of venereal disease were reported in 1924—193,844 of gonorrhea; 160,790 of syphilis; and 8,429 of chancroid—which was an increase of 27,382 cases (7.2 percent) over 1923.

This increase does not necessarily mean that there were more cases, as it can be accounted for by more accurate diagnosing and conscientious reporting of these diseases.

OPENING FOR DOCTOR

The opening at White Rock, S. Dak., has not been filled. Address The White Rock Drug Co., for particulars.

THE AMERICAN BOARD OF OTOLARYNGOLOGY

The American Board of Otolaryngology will hold its first examination during the Meeting of the American Medical Association in Atlantic City, May 25 to 28.

According to rules of the Board, applicants are divided into three classes.

Class 1.—Those who have practiced Otolaryngology ten years or more.

Class 2.—Those who have practiced Otolaryngology five years and less than ten years.

Class 3.—Those who have practiced Otolaryngology less than five years.

The type of examination is different for each class.

The Secretary, Dr. H. W. Loeb, 1402 S. Grand Blvd., St. Louis., Mo., announces that thus far over three hundred applications have been made.

HEALTH EXPOSITION

The National Baby Congress and Health Exposition, sponsored and supervised by the Illinois State Medical Society, will be held in the American Exposition Palace, 666 Lake Shore Drive, Chicago, Ill., May 2 to 9, 1925. For particulars address Dr. R. R. Ferguson, 666 Lake Shore Drive, Chicago.

STOMATOLOGY AT THE NEW YORK POLYCLINIC MEDICAL SCHOOL

The New York Polyclinic Medical School has established a section in stomatology, as a part of its department of gastroenterology. Dr. Alfred J. Asgis, Sc.B., D.D.S., has been appointed Clinical Professor of Stomatology.

OPENING FOR PHYSICIAN

We learn that there is an opening for a physician at Bradford, Ill., due to the death of Dr. Kennedy. Anyone interested should write to Mrs. E. J. Kennedy, Route No. 1, Bradford, Ill.

THE 1924 INDEX

The Index for Volume 31 of CLINICAL MEDICINE (1924) is now ready for delivery. Any physician who wants one of these to bind with his numbers for last year can have one free by asking for it.

DEATH OF DR. BURTON

Dr. Marion Leroy Burton, President of the University of Michigan, died at his home in Ann Arbor on February 18, 1925.

Although a man only slightly past fifty. Dr. Burton had made an enviable record as an educator, having been president of one college and two universities, all of first rate importance.

His loss will be mourned by all Michigan alumni, especially those of recent years.

MEDICAL ARTS CLUB

A Medical Arts Club is now being organized in Chicago. Its purpose is to form a center for the social and professional life of the medical and dental professions in Chicago and the Middle West.

It will provide all the facilities expected of a well-appointed club, in addition to a medical library and meeting places for various societies.

A comprehensive program for medical development is being arranged.

The address is 25 E. Washington St., Chicago.

DR. SECHER ON SANOCRYSIN

Dr. Knud Secher, of Copenhagen, who did most of the clinical work in the study of Sanocrysin, presented the results of his investigations before the Chicago Tuberculosis Society on March 12, 1925.

Dr. Secher showed many interesting lantern slides and presented one patient who has been treated and apparently cured by this method.

He emphasized the facts that the reactions following Sanocrysin are much like those after Koch's tuberculin, and that the severity of the reaction depends upon the number of bacilli present; if these are many the fever runs high, and erythema and albuminuria frequently develop—we have tuberculous shock. In cases like these, untoward results can usually be avoided by administering convalescent serum.

GUGGENHEIM FELLOWSHIPS

Announcement is made of the establishment of the John Simon Guggenheim Memorial Foundation, for the establishment of fellowships for advanced study abroad.

These fellowships will be open to both men and women for the purpose of research in any scientific or cultural subject or in the fine arts.

Any who may be interested in details should address Henry Allen Moe, Secretary, 120 Broadway, New York City.

Send for This Literature

To assist doctors in obtaining current literature published by manufacturers of equipment, pharmaceuticals, physicians' supplies, foods, etc., CLINICAL MEDICINE will gladly forward requests for such catalogues, booklets, reprints, etc., as are listed from month to month in this department. Some of the material now available in printed form is shown below, each piece being given a key number. For convenience in ordering, our readers may use these numbers and simply send requests to this magazine. Our aim is to recommend only current literature which meets the standards of this paper as to reliability and adaptability for physicians' use.

Both the literature listed below and the service are free. In addition to this, we will gladly furnish such other information as you may desire regarding additional equipment or medical supplies. Make use of this department.

P- 30 Helping the Cell to Help Itself. 32-page booklet. The Alkalol Co.

P-305 Equipment and Surgical Instruments for Physicians. Bul. No. 121. 64-page booklet. A. S. Aloe Co.

P-369 Doctor—This is for you. 4-page folder. Andron Hygienic Co., Inc.

P- 21 Surgical Operations, for the Surgeon and General Practitioner. Dr. R. B. Waite. Antidolor Mfg. Co.

P-227 The Doctor's Factotum. Arlington Chemical Company.

P-239 The Treatment of Sexual Impotence. 16-page booklet. Astor Chemical Corp.

P-271 Pharmaceutical Preparations of Established Merit. 11-page booklet. E. Bilhuber, Inc.

P- 83 Yatren-Casein in Non-Specific Protein Therapy. 4-page folder. Ernst Bischoff Co.

P-264 Phosphorized Cod Liver Oil. Borcherdt Malt Extract Co.

P-237 Information for the Medical Profession about Bovinine. 36-page booklet. The Bovinine Company.

P-371 Deep Therapy Lamp Perfected. Burdick Cabinet Co.

P-156 Facts Worth While Concerning Free Iodine Therapy. 8-page booklet. Burnham Soluble Iodine Co.

P-306 Letters-in-Evidence from Physicians. Philo Burt Mfg. Co.

P-344 Rheumatism Sero. 4-page folder. California Endocrine Foundation Laboratories.

P-275 Clinical Data on Campho-Phenique. 4-page folder. Campho-Phenique Co.

P- 92 New Light on an Old Remedy. 12-page booklet. Century National Chemical Co.

P-311 The Cure of Cystitis, Pyelitis and other Inflammatory Conditions of the Urinary Tract. Chicago Pharmacal Co.

P- 79 Chloron, Chlorax, Cito, Lithiol. 4-page folder. Chlorine Products Co.

P-375 Advantages of Lipoiodine Ciba. 8-page booklet. Ciba Company.

P- 71 Goiter Special. 4-page folder. Columbus Pharmacal Co.

P-261 Causes and Effects of Pyorrhea. 32-page booklet. Dentinol and Pyorrhocide Co., Inc.

P- 51 Treatment of Syphilis. 32-page booklet. Dermatological Research Laboratories.

P-104 Petrolagar (Deshell). What is is. 8-page booklet. Deshell Laboratories.

P-313 Glorified Petrolatum. 4-page folder. Dionol Company.

P-349 Acute Indigestion. 6-page folder. Drug Products Co.

P -37 Microscopes and Biological Apparatus. Catalog "B," 172 pages. Eimer & Amend.

P-194 Ninth Edition of Electro Surgical Instrument Co. Catalogue. 80 pages.

P-378 The Heart and Its Disorders. 36-page booklet. Fellows Medical Mfg. Co., Inc.

P- 58 A Symposium on Yeast. 24-page booklet. The Fleischman Co.

P-380 Nativelle's crystallized Digitaline. 8-page booklet. E. Fougera & Co.

P-198 Pluto Water. Its Medicinal Values. 16-page booklet. French Lick Springs Hotel Co.

P- 22 Biological Products for Human Use. With Indications for Use, Dosage, Price List, etc. Gilliland Laboratories.

P-268 Supporters, Trusses and Elastic Bandages. 16-page booklet. Hall & Cary Weaving & Belting Co.

P-381 The Quartz Lamp. 10-page booklet. Hanovia Chemical & Mfg. Co.

P-255 Lunosol, by Herman Hille, Ph.D. 16-page booklet. Hille Laboratories.

P-327 La Grippe. Its Sequelae and Their Treatment. Hillside Chemical Company.

P- 80 Allonal. The non-narcotic Hypnotic and Analgesic. 8-page booklet. Hoffman-LaRoche Chemical Co.

P-356 Horlick's Malted Milk as a Diet in Influenza - Pneumonia. Horlick's Malted Milk Co.

P-204 Uterine and Abscess Irrigator. Huston Bros.

P-341 Collodaurum. Ideal Skin - Suture Material Company.

P-287 The Intravenous Treatment of Malaria, by B. S. Wyatt, M.D. 4-page reprint. Intravenous Products Co. of America, Inc.

P-249 A Sinusoidal Manual, by T. C. Cornell, M.D. 54-page booklet. McIntosh Electrical Corp.

P-173 An Epochal Discovery. The Control of Hemorrhage. 4-page booklet. Wm. S. Merrell Co.

P-245 X-Ray Electro-Medical Apparatus. Wm. Meyer Company.

P-175 Compound Diarrhoea Powder. Mutual Supply Co.

P-293 Clinical Data and Case Reports on the Intravenous Injection of Calcium in the Treatment of Tuberculosis. N. Y. Intravenous Prod. Co.

P-393 The Betzco Line. 1925 catalogue. Frank S. Betz Company.

P-394 Rheumatism—Its Modern Conception and Treatment. 14-page booklet. Battle & Co.

P-395 A Further Contribution on the Treatment of Sexual Insufficiency with Testogan and Thelygan. 4-page folder. Cavendish Chemical Co.

P-396 Lipoiodine "Ciba." A Neurotropic-Lipotropic Iodine Preparation. 4-page folder. Ciba Company.

P-397 Acute Lobar Pneumonia. 8-page folder. Drug Products Co.

P-398 The Use of Dried Milk, by A. E. Naish, M.A., M.B. Contab., M.R.C.P., Lond. 4-page folder. Dry Milk Co.

P-399 Pyrex Glassware. Eimer & Amend.

P-400 Organotherapy in E. N. & T. Work, by Henry R. Harrower, M.D. 14-page booklet. Harrower Laboratory, Inc.

P-401 Magnesium Superoxol. 4-page folder. Merck & Co.

P-402 Blood Pressure Outfit. 6-page folder. Sanborn Company.

P-403 Medinal. 4-page folder. Schering & Glatz, Inc.

P-404 Efficient Economical Everready. 11-page booklet. Victor Electric Corp.

P-405 What do you know about preventing venereal disease? 6-page folder. Andron Hygienic Co.

P-406 Iodo-Bismuthate of Quinine (Fraisse). 6-page booklet. E. Fougera & Co.

P-407 Medical Pocket Quarterly, April, 1925. Reed & Carnrick.